THE PERCEPTIONS AND EXPERIENCES OF E-LEARNING WITHIN UNDERGRADUATE HEALTHCARE EDUCATION: A CASE STUDY

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The perceptions and experiences of e-learning within undergraduate healthcare education: A case study

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Abstract

Introduction: The use of e-learning in healthcare education is being increasingly advocated and used, but can prove challenging. The need to explore educator's experience and student perspectives in relation to this area of pedagogy was identified as a relevant area of study

Study Aim: To explore and critically analyse the perspectives and experiences of healthcare educators and students regarding e-learning.

Design: A mixed methods exploratory case study of one HEI's use of e-learning.

Methods: Quantitative descriptive data was collected through educator and student questionnaires from 34 academics and 127 students across four university departments delivering undergraduate healthcare related programmes. A sample of 12 module web spaces and associated documentation was reviewed. The data sets were considered in relation to the thematic analysis of 16 semi-structured educator interviews and 6 healthcare student focus groups.

Results: Educator and student needs are interwoven during undergraduate healthcare provision. Differing educational philosophies, practices and culture across the cases created opportunities and challenges with e-learning. Two differing, yet potentially complimentary definitions of e-learning existed within and across the four departments which produced either congruence or conflict toward the varied e-learning approaches. Student respondents selectively engaged in what was primarily educator controlled e-learning.

Conclusions: The findings highlighted the need for agreement and understanding of philosophical and pedagogical underpinnings which define and shape e-learning by educators and students, along with an awareness of differing professional cultures across which e-learning is required to operate.

Originality / Value: The findings of this study offer a deeper understanding of the effect on educator and student engagement in e-learning of differing higher education and professional practice education cultures. A model is offered as a response to particular issues faced by the study respondents; whilst non-generalisable the model may serve as an enlightening guide for educators who are introducing or applying constructivist e-learning practices within undergraduate healthcare provision and benefit the student experience.

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Chapter 1: Introduction

1.1. Introduction to the study

An interest in the use of e-learning in professional healthcare education began for this author on entering nurse education in 2000. During this time many universities aspired to introduce e-learning into their programmes in order to meet a perceived student demand and capitalise on potential economic benefits (ESC, 2005; JISC, 2009; Jonas & Burns, 2010; Schneckenberg, 2009). The author's own subject area was no exception, where he joined a team of educators charged with introducing the use of a virtual anatomy and physiology 3D programme into an established pathophysiology module. During development, which proved an interesting and apparently straight forward process of weaving the 3D resource into the existing problem based learning strategy, the decision was made to embrace an opportunity to facilitate greater student controlled learning by substituting directed and independent e-learning for the original lecture based education sessions. This was seen as facilitating periods of student controlled knowledge discovery through personal engagement with the 3D software, and free educators from delivery of what were perceived as didactic lectures. The development team however, were self-selected, and by default both interested and motivated to explore such technology-supported opportunities. Little consideration was given to the effect the initiative might have on other nurse educators who appeared neither equipped nor motivated to adopt technology enhanced learning (TEL).

There also appeared to be an unquestioned assumption that students would welcome and enjoy learning mediated through the use of technology. As experienced by other educators, this proved not to be the case for a significant number of students (Federico, 2000; Hara & Kling, 2000; Jones, Packham, Miller, & Jones, 2004; McVeigh, 2009, Strong, Irby, Wynne, & McClure, 2012). Following negative evaluation of the blended learning module whereby students indicated strong dissatisfaction with the new learning format, the programme leader reverted to a traditionally delivered lecture format.

This introduction into the subject of e-learning and its associated e-pedagogy proved to be a salient lesson that led to a continued interest in TEL from not only a technical or pedagogical perspective but, also the personal perspectives of the educators and

students engaged in e-learning. The overall aims of the study was therefore to explore and critically analyse the perspectives and experiences of educators and students when engaging in e-learning within undergraduate, pre–qualification professional health related education.

1.2 Technology in Education: The Context.

Although the term e-learning remains a continually developing concept, the use of technology in education is far from new (Ellington, Percival, & Race, 1993; Glenn, 2008; JISC, 2007a, 2009). Glenn (2008) identified six technological innovation milestones in learning. First came the written word on paper, whilst the second innovation was the advent of printing which allowed mass distribution of knowledge. The third was the use of film and television broadcasts which allowed other educators, events and experiences into the classroom. The fourth was a range of storage devices including audio-cassettes and videotape which allowed educators to more easily timetable the repeated showing of educational material. The fifth was the mass produced computer with CD-ROM. This last invention gave birth to the ability for learners to interact with pre-prepared exercises and gain instant feedback, and was termed computer aided learning by writers such as Rusby (1979) Abdelziz,, Samer, Karem, and Abdelrahmen (2011) and Blomeyer and Martin (1991). The sixth is the current networked, World WideWweb-based e-learning phenomenon.

Educators and students have had to continually adapt to technological changes in the way they teach and learn. It is the speed with which the last two innovations noted above have demanded change of higher education practice that is unprecedented (Marshall, 2011; Singh & Hardaker, 2014). The web-based technological advance is different from all previous developments, in that it encompasses all the other technologies, and if managed by a suitably knowledgeable and skilled educator, can deliver all of the other components noted by Glen (2008) in a blended fashion to learners wherever, and whenever learning is required. As many authors including Clarke (2009); Janes (2006); Joiner, Gavin, Brosnan, & Cromby (2012); and Jones, Johnson-Yale, Millermaier, and Pérez (2008) point out, the internet is the most comprehensive learning resource on the planet and dwarfs all other knowledge

repositories. It is continually expanding and is neither reversible nor fully controllable by educators.

1.3 E-Learning and Healthcare Education

In 2008, the Universities and Colleges Information System Association (UCISA) noted the increasing use of technology within higher education (HE) to both support learning and reduce costs and concluded the strategic use of e-learning would continue as an increasingly powerful driver for change within HE teaching. The UCISA study also found subjects related to medicine and health proved the greatest users of such technology (Jenkins, Browne, Walker, & Hewitt, 2011).

This increasing use of technology has its roots in higher education's response to the significant increase in demand for university courses from an elite 5% in 1960 to almost 30% of the population by the mid-1990s (Dearing, 1997) and an estimated 49% of school-leavers in England by 2012 (Coughlan, 2013). The Dearing Report encouraged the United Kingdom to become a 'learning society', where flexible lifelong learning should be available to meet the needs of a much expanded and more diverse student body. Dearing (1997) suggested e-learning had the potential to deliver an effective way of meeting this demand through improved ways of learning and teaching. It promises not only flexibility in learning, but greater levels of student control and choice. By 2001, the document 'Working together, learning together: A framework for lifelong learning for the NHS' (DH, 2001) had made a commitment to developing e-learning usage and capability within the field of healthcare. The department of Health (DH) framework envisaged e-learning as enabling NHS staff to access learning opportunities when and wherever learning best fitted with their working practices and wider social demands. In 2003, the then department for Education and Skills produced a national strategy which advocated e-learning as one way in which healthcare education could be made more accessible, especially for non-traditional entry route and mature students who often have family commitments and find travelling to university problematic. An appeal of e-learning is therefore the view of it as a convenient means of education that may attract a less conventional student, and go some way to meeting the widening participation agenda (DfES, 2003).

The above view was echoed in 2005, when the National Workforce Group (NWG) of Strategic Health Authorities published a further framework entitled 'Supporting best practice in e-learning across the NHS' (NWG, 2005). This strategy aimed to promote best practice when adopting e-learning throughout the NHS, whilst also encouraging and facilitating cost effective multiprofessional and multi-agency learning accredited by HE providers. In April 2006, the department of Health developed a delivery framework for the 2005 strategy 'Modernising Healthcare Training: e-Learning in Healthcare services' (NWG, 2006b) which aimed to set out national priorities. This document was further operationalised in 2007 with the publication of national education standards for the development and e-learning content through the Connecting for Health Programme (CFH, 2007).

What many of these policy documents have in common is an uncritical acceptance of the benefits of e-learning across any healthcare learning situation. The role of e-learning in improving access to programmes, enhancing the student experience and raising teaching effectiveness is either expressed explicitly in national strategies and policy, or is implied by an emphasis on flexibility and choice. This is despite the failure of the UK's 'e-university' in 2005. A subsequent report into this failure noted that students preferred to work through existing universities with established reputations, many of which had been developing their own use of e-learning for some time. (ESC, 2005).

Whilst reviewing the use of e-learning within nurse education, Farrell (2006) agreed with the potential benefits of providing flexible, learner-centred courses which could be both cost effective and quality assured, however concurred with other researchers regarding the risk of e-learning being perceived by students as isolating and requiring well developed IT and time management skills of both students and lecturers (Kale & Richardson, 2006; Monthienvichienchai & Melis, 2006; Van Der Merwe & Mouton, 2005). It was noted that unless feelings of student isolation and poor time management are countered when implementing e-learning, high attrition rates may result (Ahmad & Jo, 2012; Moule, Ward, & Lockyer, 2010; Natalie, 2011). For undergraduate healthcare students, the added risk of incomplete learning outcomes and unsafe future practice through lack of knowledge or competence remained a firm concern of educators (Gallagher-Lepak, Reilly, & Killion, 2009; Sowan & Jenkins, 2013). The

UCISA (2008) report suggests that any future healthcare workforce will be expected to use technology to support their learning, and be increasingly expectant of the benefits e-learning can bring. Since 2010 standards of pre-registration nurse education now require explicit learning outcomes focusing on the use of information technology to be a predominant feature of any validated programme (NMC, 2010), with similar expectation existing for medical, dental and paramedic programmes (HCPC, 2014).

1.4 Justification for the study and research focus

As highlighted in section 1.1, effective e-learning that makes use of dynamically expanding technological potential is as much a sociological tension on healthcare education, as a technical and pedagogical change. It is therefore imperative to fully understand and manage the implications of e-learning for the educational community who engage with it from the perspectives of both educators and students.

Although there has been much research into organisation requirements for effective e-learning in HE (e.g. Asgarkhani, 2004; Bates, 2005; Cuban, 1986; JISC, 2007a; NWG, 2005; Sword, 2012), there remains less work on the experiences and expectations of e-learning by students and lecturers in HE in general, and healthcare education in particular. According to writers such as Blake (2009), failure to capture the views of healthcare professional educators neglects an important subset of HE stakeholders.

Of the studies that do focus on healthcare, many relate to e-learning by identifying the strengths and weaknesses of various distance learning models in relation to technology (Boulos, Maramba, & Wheeler, 2006; JISC, 2004; Myrick, Caplan, Smitten, & Rusk, 2011), or focusing on instructional design, curriculum development, and copyright (Chan & Robbins, 2006; Gotthardt, Siegert, Schlieck, & Schneider 2006; Kiteley & Ormrod, 2009; Levinson, Weaver, Garside, McGinn, & Norman, 2007; Sowan & Jenkins, 2013) with a third group examining specific outcome evaluation (Creedon & Cummins, 2012; Hawthorne, Prout, Kinnersley, & Houston, 2009; MacDonald & Thompson, 2005; Oomen-Early, 2008). Until recently, there is by comparison, a paucity of research exploring the implications of online learning from the educator's perspective, particularly from the field of healthcare undergraduate programmes, which predominantly recruit their educators from a professional rather than an

educational experiential background (Moule, Ward, & Lockyer, 2011; Owens, 2012; Petit dit Dariel, Wharrad, & Windle, 2013).

In addition, with the possible exception of researchers such as Petit dit Dariel, et al (2010, 2013, 2014), Coster, Norman, & Murrells (2008) and Hoskins and Van Hoof (2005) who focus primarily on surveying student attitudes in relation to information technology, there appears to exist a predominant research focus on 'hard' technical, competence, or factors as to why educators and students may not engage in e-learning, at the expense of what Petit dir Dariel et al (2010, 2013, 1014) term 'soft' factors including pedagogical beliefs, workplace culture, and attitudes to information technology and social media (Petit-Dit-Dariel, et al, 2014). These factors are by nature harder to identify and understand, requiring an in depth qualitative research method to explore, not only the more tangible factors that aid or hinder successful engagement with e-learning, but also the human perspectives of all the people involved. Furthermore, the literature review suggested a predominance of research where factors affecting educators and students were often addressed independently of each other. Such studies could be seen as risking the loss of deeper understanding of the interplay between educator and student experience and views that a combined case study approach could bring.

1.5 Research questions, design and thesis structure.

This thesis therefore reports and discusses an in-depth, mixed methods, exploratory case study which aims to provide new knowledge on the beliefs, attitudes, and concerns of undergraduate healthcare profession based educators. This data is then considered in relation to how educators actually engage in e-learning, and further contrasted against similar data drawn from their students. The intention was to generate new knowledge on the realities of engaging in e-learning within a case university, focusing on the perspectives of educators and students. Due to the dynamic pace of change within information technology, and the unique perspective hoped to be gained from the research focus, an exploratory study was considered most appropriate given the current level of research available. The current case study is focused through the use of five research questions (RQs):

- RQ1. What definitions of 'e-learning' are held within the study population?

- RQ2a. How do educators engage with e-learning?
- RQ2b. How do learners engage in e-learning?
- RQ3a. Why do educators engage with e-learning as they do?
- RQ3b. Why do learners engage with e learning as they do?

The study was structured to take advantage of the case study design strength of facilitating exploration of a single issue from differing perspectives and using differing methods (Exworthy, 2012; Gerring, 2007; Gibbert, Ruigrok, & Wicki, 2008; Gomm, Hammersley, & Foster, 2000; Simons, 2009; Stake, 1995; Thomas, 2011; Yin, 2013). To that end, three distinct data sets and research methods were used:

- Data set 1:
    - A questionnaire on educator e-learning engagement
    - A questionnaire on student e-learning engagement
- Data set 2:
    - A structured review of undergraduate healthcare programme module web space design and use
- Dataset 3:
    - Semi structured interviews of educators
    - Focus group discussion with students.

These methods of enquiry were applied within four separate departments across two faculties delivering undergraduate healthcare programmes to gain multiple perspectives on the issue of e-learning engagement.

The literature review is presented in chapter two which contextualises the study and identifies current knowledge deficit. Chapter Two also contextualises the case study and highlights its boundaries. Chapter three outlines the philosophical and theoretical frameworks which underpinned the study, along with the design methods, data collection procedures, ethical considerations, data analysis techniques and study limitations. Chapter four presents and contrasts the combined findings from educators and students from the three data sets. Chapter five provides a discussion of the findings in relation to the three original research questions and the previous literature review, with chapters six and seven outline the study conclusions and recommendations.
Finally, the appendices provide copies of all data collection tools, participant letters and interview protocols used throughout the study.

Chapter 2: Literature Review

The literature review aimed to contextualise the current staff and clarify the focus and scope of the case study design, which is a primary starting position for any case study research (Merriam, 1998; Thomas, 2011; Yin, 2013). A broad range of educational, psychological, social and healthcare related search engines were trawled from the start of the doctoral study using an initial search timeline of publications from 1990 onwards, as this has been considered by e-pedagogics as the juncture when closed system computer aided learning began to develop into current internet based e-learning (Adams, 2003; Boulos, Maramba, & Wheeler, 2006). Search databases including ASSIA, Intute, Blackwell Synergy, Infotract, NMAP, Proquest and Science Direct were used, followed by more detailed post-article review 'snowball' searches of wider related aspects such as learning theory. A review of grey literature such as relevant newspapers and internet based news articles was also included. Areas of relevance were clarified including healthcare education, e-learning engagement and information technology competence as search terms. The search on healthcare educational publications encompassed theories of learning in general and applied to healthcare and e-learning in particular; whilst exploration of e-learning engagement considered research into learning styles, the defining of e-learning practices, plus differing stakeholder attitudes to both e-learning pedagogy and application. The literature on information technology competence considered both educators and students from the perspective of a practice based professional group.

The review takes a broadly macro – meso – micro framework approach to allow for consideration of differing levels of enquiry. Firstly, taking a macro view, the review will look at general theories of education before considering a meso level examination of definitions of e-learning and how such definitions relate, and are applied to healthcare education. Finally a micro level consideration of the pertinent literature on educator and student experience of e-learning will conclude the chapter. The chapter is presented in the following sections:

2.1: An overview of learning theory

2.2: Learning styles

2.3: Learning styles and e-learning

2.4: The influence of culture on e-learning

2.1 An overview of learning theory.

Several writers on the subject of technology enhanced learning (TEL) state that the application of e-learning had evolved from three fundamental theories of learning, namely behaviourism, cognitivism, and constructivism, (with constructivism itself borne of humanist learning theory) (Cheng, 2013; Dalsgaard, 2005; Duane & Satre, 2014; Meger, 2012; J. Meyer & Shanahan, 2004). These theories focussed on the way students learnt, considering learning as a lasting changed state, emotionally, cognitively, and/or physiologically, and advocated that learning occurred through experiences and interactions with either knowledge, course materials, or other learners and educators. They are all therefore underpinned by the concept of internal brain based learning. Behaviourism was borne out of the work of Watson (1913) and later developed by theorists such as Skinner (1938) and Thorndike (1931) and relies on consideration of overt behaviours that can be observed and measured, but has been criticised for not considering the effects of thought processes which occur in the mind which elicit behaviour (Alzaghoul, 2012; Dalsgaard, 2005). Behaviourist learning theory can be seen in early computer aided learning packages containing simple exercises for the student to reproduce.

In answer to behaviourist limitations, cognitivism or cognitive learning theories first developed through the works of Piaget (1973) and Vygotsky (1978) and builds upon some of behaviourism's basic tenets, whilst rejecting the notion of a demonstrable change in behaviour due simply to an individual's responses to learning stimuli. Cognitivism therefore accepts some behaviourist concepts but in conjunction with

social learning theory, goes further and views learning as gaining and then reorganising knowledge received through the senses within the cognitive structures humans use to process and store information. These processes include memory, feelings and perception. According to cognitivists, new learning is achieved when knowledge is processed, understood and stored in the short term memory by using knowledge and skills already present in long term memory. The new (updated) knowledge and skill is then further stored in the long term memory (Meger, 2012; Pritchard, 2009). The application of cognitive science within e-learning pedagogy is seen in the use of metaphors, structuring topics into meaningful groups, and organising learning material from simple exercises to more complex activities. Writers such as Petty (2013) place TEL objects such as CD ROM packages and short instructional learning objects as within the realm of cognitivism and instructionism, and opine that interacting with a learning object through a computer does not promote the social interaction required for the third theory of learning, namely constructivism.

Constructivism from an epistemological perspective is considered in Chapter 3, however from a learning theory perspective constructivism further develops ideas within behaviourism and cognitivism by accepting multiple perspectives on reality and maintaining that learning will be based upon a personal interpretation of the world, (Barkin, 2004; Glaserfeld, 1995; Jonassen, 1991; Keengwe, Onchwari, & Agamba, 2014). Therefore, according to the constructivist school of thought, a person's learning relies on past experiences, personal mental schema, and beliefs and attitudes, which all shape interpretation of a learning event. Past experiences, and beliefs are inevitably shaped by the community within which the learner resides, be that their cultural background, peers, or wider professional community. Constructivism is therefore firmly rooted in the humanist philosophy of education with a focus on a student's thoughts, feelings and personal motivations to learn what is meaningful to them (Barkin 2004; McIntosh 2011; Von Glaserfeld 1995). For social constructivists, it is essential that students interact and communicate with each other, and / or their educators to create personally meaningful knowledge for deep learning to take place (Almala, 2006). Although humanist learning theories would appear to have much to offer healthcare education, particularly with regard to consideration of professionalisation and the affective domains (McIntosh, 2011); authors such as Purdy (1997) and Glenn and Moule (2006) caution of the tensions between promotion of

student centred self-directed study and completion of a professional curriculum with content and competencies prescribed by a professional body.

According to Hein (1991) and Von Glaserfeld (1995), two key principles underpin constructivist education. Firstly, a focus on the learner and how they learn, and not on the programme content being taught (Dalsgaard, 2005; Ghulam Muhammad, Allah, & Shadiullah, 2010). Secondly, acknowledgement that there is no relevant knowledge independent of the meaning attributed to experience (constructed) by the student, or their learning peer group. Although, this position appears to be somewhat extreme and idealistic, there is synergy and agreement with the learning theory of Knowles (1980, 1984) with regard to the importance of the relevance of information and its link to the motivation to learn, and with Kolb's experiential learning theory (Kolb, 1984). Such focus on the motivation to learn places constructivism firmly in the school of humanism, which considers personal growth and fulfilment as central to motivating students to learn. Motivation to learn is central to the work of Knowles who adopted the phrase 'andragogy' from earlier theorists such as Kapp (1833) resulting in the term now being synonymous with adult education (from 'andr' meaning man) as opposed to children's learning (from 'Pead' meaning child) (Knowles, 1980).

For Knowles, who drew heavily on the psychological focus of Carl Rogers; adult education differs from educating children, and is underpinned by five assumptions. Firstly, an adult's concept of self is one of self-directing, as opposed to being dependent as when a child. Secondly, adults have a far greater store of experiences on which to draw upon when learning. Third, as adults mature they become increasingly ready to learn as their social roles develop. Fourthly, an adult's orientation to learn relates far more to the ability for the learning to be immediately applicable, and relevant to perceived current life needs. Finally, an adult motivation to learn is generated internally through a drive for self-esteem, social growth and self-actualisation (Knowles, 1980, 1984).

Although the views of Knowles have been questioned by writers who point out it is apparently based on the two incompatible theories of humanism and behaviourism, (Jarvis, 1987; Tennant, 1997) other, more recent researchers have advocated considering the paradigms not as opposing theories at either end of a spectrum, but as

compatible approaches that can be plotted at right angles to each other to produce a model of application depending on the learning situation (Cronjé, 2006). Such thinking highlights that many of these underlying learning theories were developed before the advent of TEL, and so may require re-evaluating, (Race, 2010; Salmon, 2003; Sanchez, Miranda, & Vera, 2004; Sieman, 2005). When applied to the digital age, the environments required for constructivist learning require teaching competencies that facilitate a range of virtual delivery strategies that go beyond objectivist information imparting paradigms, and recognise and value individual online knowledge creation as well as virtual content delivery. It therefore resonates with the use of reflection in healthcare education (Kinsella, 2006, 2010; Schön, 1983) This difference in approach is often contrasted as instructionist versus constructivist, with instructionist approaches utilising an educator controlled and sequenced approach, in more of a 'read this, now do this' manner; whilst constructivist approaches facilitate students to steer their own learning journey through rich environments and scenarios to construct and test out new knowledge either individually, or as part of a group, (Abdelaziz, 2013; Aczel, Continat, Hardy & Iggulden, 2006; Duane & Satre, 2014). The implications of such philosophical approaches to learning and teaching become important when considering how students and staff might engage in e-learning materials. This is particularly of relevance to the current study with regard to the potential for misalignment if educators and their students do not share the same perspectives on professional education.

An enlightening further progression on constructionist views of learning comes from the work of Wenger (1998) who is widely considered the originator of the theory of 'communities of practice'. Wenger argued that engagement in social practice is the essential process by which humans learn and become who they are. He rejects primary analysis of the individual or the social institution where education is taking place, and instead focuses on the 'informal communities of practice' that people form over time when engaged in any endeavour. It is these informal communities that give meaning and therefore importance to any learning, and importantly, both contribute to, and re-affirm a learner's identity.

The next section provides an overview of the literature on learning styles.

2.2 Learning styles

A learning style has been described as a student's natural, habitual, or preferred way of receiving, processing, and retaining new information (Brittan-Powell, Legum & Taylor, 2008; Reid, 1995). Learning styles pertain to a preferred way in which a learner uses an ability (Schmidt & Brown, 2005), and although not without debate as to their empirical robustness, learning styles are considered important in aiding students (and educators) to become more self-aware (Berry & Settle, 2011; Feldman, Monteserin, & Amandi, 2015; Honey & Mumford, 2006; Kolb & Kolb, 2006). There have been numerous learning styles described, however this review focuses on those most applicable to e-learning. That stated, many have a common structure in that they rely on descriptions of opposing personality traits such as reflective versus impulsive, or other cognitive preferences such as visual versus auditory learning. These opposing traits represent two ends of a continuum on which the student's predisposition might be plotted. However where a learner is plotted does not represent positive or negative finding as each end of the scale has both advantages and disadvantages, depending on the situation, (Berry & Settle, 2011; Blevins, 2011).

The more popular examples of learning style inventories include Kolb's (1984) influential Learning Styles Inventory (now in its fifth reviewed format), which is based on Kolb's own Experiential Learning Theory (ELT) derived from the work of theorists such as Dewey, Lewin, Piaget, and psychologists such as Jung, and Rogers (Pritchard, 2009). Within ELT Kolb presents six propositions he feels are shared by all the above theorists, which can be condensed as:

1. Learning should be viewed as a process of continual reconstruction of experience, not an outcome; whereby student engagement and feedback are paramount.
2. All learning is relearning, in that students already contain beliefs and ideas which must be drawn out, built upon, and tested.
3. The resolution of conflicting ideas is what drives adult learning through reflections, feelings and thought.
4. Learning is holistic and requires adaption of the entire person which includes perceptions, feelings and behaviours, not just cognitive processes.
5. All learning is through interaction between the learner and their environment whereby new experiences are integrated into existing concepts and vice versa.

6. Learning is therefore the creation of knowledge, not merely the transmission of fixed information, and as such Kolb's ELT is underpinned by a constructivist theory and the concept of socially constructed knowledge.

Kolb takes the above propositions and arranges them as two modes of understanding experience, namely, abstract conceptualisation (AC) and concrete experience (CE) and a further two modes of transforming experience, namely reflective observation (RO) and active experimentation (AE). Learning is seen as a cyclical process whereby the learner engages in the above four processes of experiencing, reflecting, thinking, and acting in response to a learning situation. Drawing on Jung's analytical psychology, Kolb (1984) also asserts that learning styles are influenced by four further factors, educational specialisation, career choice, personality type, and current job role and current tasks. Although not without its critics who question the validity of Kolb's view of the role of experience in learning, (Hartley 2004; Hopkins, 1993; Holman, Pavlica, & Thorpe, 1997; Kayes, 2002), or lack of empirical validation, (Coffield, Moseley, Hall, & Ecclestone, 2004) through increasingly large amounts of respondent data, learning style assessments using Kolb's learning style inventory have during the last three decades identified four approaches to learning that can be grouped and labelled as an identified learning style namely: converging, diverging, assimilating, and accommodating (Kolb 1971, 1985, 1999, 2005) and Kolb & Kolb (2010). Kolb's learning style inventory has been used to explore the justification for multimedia e-learning and several such studies will be considered in the next section.

Other learning style inventories include Honey and Mumford's 1986 model which is structured around four identified styles of 'activists', 'reflectors', theorists, and 'pragmatists', from which the authors developed an 80 item diagnostic questionnaire (Honey & Mumford, 2006). Within this model, activists are considered learners who prefer to be 'doing' rather than passively listening or reading. This open minded group, prefer novelty over repetition when learning, are not natural planners, and prefer to work in groups where they might share and test new ideas.

Reflectors prefer to watch, listen and observe from the back of a group and collect all information before coming to a decision. According to Honey and Mumford (1982), reflectors are strong on planning and 'seeing the bigger picture' being able to analyse

data well to come to a, possibly slow, but sound decision. Theorists are strong at developing observations into frameworks, but are uncomfortable with subjective or ambiguous ideas until assessed and integrated into their framework. This makes theorists useful for problem solving by means of a sequential, robust process. Finally, pragmatists like new ideas, but prefer to see a practical application before considering the idea of value. They have a tendency to accept ideas that work well, and quickly discard those that do not work, rather than spend time analysing why. Pragmatists are therefore confident problem-solvers who can quickly take advantage of new ideas when learning.

According to Blevins (2011), the picture is further refined by considerations of age, with generational differences also impacting on how students might prefer to learn. Through reference to the work of Knowles (1980, 1984), Knowles, Holton and Swanson (2012), and her own previous small scale studies, Blevins characterises students into a further four groups: 'Veterans' – born 1925-1945 (respectful of educators and preferring traditional class based education over creativity); 'Baby Boomers' – 1945-1964 (lifelong learners who expect high standards of education received in partnership with the educator, who respond well to icebreakers, teamwork and discussion); 'Generation X' – born 1965-1980 who prefer convenience in learning due to demands on their time, possibly preferring distance learning methods with visual learning strategies; and finally, 'Generation Y' – 1980–2001, who appear similar to Generation X, but are more open to creative, flexible and group based working. Generation Y expect learning to be fun, with immediate feedback and are comfortable with technology, possibly at the expense of critical thinking, (Blevins, 2011; Knowles et al 2012)

As with Kolb and Honey and Munford, Blevins devised her diagnostic inventory to help learners clarify in which dimension they might predominantly fit. This can be seen to be the reasoning behind other learning style theorists such as Fleming and Mills who developed the VARK (visual, aural, read/write, kinaesthetic) model based on the learning theory of neurolinguistics programming (Fleming & Mills, 1992), or Schmeck, Ribich and Ramaniah (1984) who developed the inventory of learning processes. Each learner is unique however, and healthcare students along with any other group of learners engaged in e-learning are likely to be a heterogeneous group

of students from a broad age range, who possess differing cultures and belief systems. Regardless of the learning style considered, students are unlikely to fit one category exclusively, tending to demonstrate traits from each category depending on the situation (Herrman, 2008). Avillion, (2009) however, advocated that most learners fell into one of three learning styles derived from the neuro-linguistic school, namely visual (preferring written information, diagrams and handouts), auditory (active listeners who enjoy open discussions), or kinaesthetic (those who prefer hands on practice and manipulating equipment), with 80% of the general population being predominantly visual learners.

Regardless of the theoretical model considered, the prospect of identifying a predominant learning style is appealing to educators as it gives rise to the possibility of designing learning opportunities that might most often meet their students' individual profiles and avoid those exercises which might be ill- fitting (Blevins, 2011; Buerck, Malmstrom, & Peppers, 2003; Chen, 2015; Grace, 2001). Some methods of teaching can make little allowance for differing student teaching styles, (Hartley, 2004), yet it is being able to more readily give students a choice of how they engage with differing learning materials that many educators find promising when considering e-learning, with its ability to present the same learning in multiple formats, (Groat & Musson, 2011; Lujan & DiCarlo, 2006).

2.3 Learning styles and e-learning

There have been several conflicting studies focusing on information technology and its influence and effect on student learning style. For example, in 2006 Lujan and Dicearlo surveyed 166 first year medical students using the VARK learning styles inventory, (Fleming & Mills, 1992) and concluded that the majority of students (63.8%) preferred multiple choices of the ways in which they received learning materials and that to rely on a single delivery format reduced engagement (Lujan & DiCarlo, 2006). Yet, in 2009, Zacharis developed a comparison study of 161 American computer science students undertaking the same module by either online delivery or traditional 'face-to-face' (F2F) delivery. The aim was to determine if learning style (as determined using Kolb's Experiential Learning Theory modes of concrete experience; reflective observation; abstract conceptualisation; and active experimentation (Kolb,

1984)) affected delivery preference and module performance (Zacharis, 2011). The findings were similar to earlier studies (Brittan-Powell et al., 2008; Buerck et al., 2003; Oh, 2005) and concluded that student learning style does not influence preference for either on-line or physically present face-to-face learning, nor does learning style affect overall student outcomes when compared against either method of delivery. Zacharis also echoed the views of others in stating that the reasons for student preference for one course format over another had little to do with learning styles, and more to do with factors such as travel difficulties, limitations of IT competence, and commitments outside of University.

Regardless of conflicting views on the importance and impact of learning styles, the literature considered in this section suggests students do develop a set of behaviours and approaches to learning independent of an educator's teaching method, and will demonstrate preferences for the way that knowledge is acquired and used. If this view is accepted, then E-learning instructional design and underlying pedagogy will have profound implications for those preferences, which in turn will affect student engagement in the online activities expected by educators.

2.4 The influence of culture on e-learning

Determining potential factors affecting the level of e-learning engagement, for both students and educators, is further complicated by considerations of cultural background. Livingstone (2015); Porcaro (2011) Marcus, Aykin, Chavan, & Day (2000); and Simmons, Simmons, Hayek, Parks and Mbarika (2012) all cautioned that e-learning technologies and practices will be shaped by an inescapable cultural bias, and that this will affect perceptions of what is appropriate to be learnt through this method. Furthermore, as e-learning is used to access a global market, differing international cultures give rise to differing learning styles, which may well prove at odds with a 'one size fits all' ethos. Hofstede (1991) identified five cultural dimensions when exploring cultural differences in work related values, namely:

- Power-distance
- Collectivism versus individualism
- Femininity versus masculinity
- Uncertainty avoidance

- Long-term versus short-term time orientation

Hofstede (1991) then graded and ranked these cultures against his criteria for 54 nations with differing backgrounds such as USA, Japan, India and the UK. Hofstede's criteria can be viewed as having relevance for the higher education context (Tylee, 2001).

Hofstede's power–distance dimension related to the extent to which less powerful members of a society expect and accept unequal power within a group or culture. Whereas high power-distance cultures such as China, accept centralised power, and an unquestioning population, low power distance cultures viewed workers and management as being closer together. For high power cultures teachers are seen as wise and knowledgeable and often accepted as superior in knowledge and status; whereas learners in low power cultures would expect their educators to facilitate learning as an equal, rather than dictate education. It is logical to surmise that differing cultural perspectives would affect expectations of who is allowed to access online materials and in what way; and in multicultural western society, researchers have identified a potential for misunderstandings between differing cultural groups of students and educators if ground rules and expectations are not clarified and adopted by all (Barbera & Linder-VanBerschot, 2011; Brown, 2010; Hardaker & Singh, 2011; Simmons et al., 2012; Tylee, 2001). Tylee (2001) used Hofstede's dimensions as a framework to consider the cultural acceptability of differing online learning website design, and highlighted important issues for e-educators when considering the effect of e-learning on culture, particularly with regard to the dimensions of power-distance and collectivism versus individualism. .

Hofstede's collectivism versus individualism dimension considers to what extent people are brought up in a family group that rewards loyalty with protection. Individualism is the cultural opposite of collectivism, where family ties are loose, with expectations of society members looking after their immediate, rather than extended family. According to Hofstede (1980), collectivist cultures value harmony over truth, preferring to listen more than speak out, whilst considering an acceptable appearance or 'face' in their immediate society as very important. Tylee (2001) advocated that in the workplace these cultures value personal development and mastery of roles; whereas individualistic cultures value personal challenges and career development as

motivators for work, including pay and freedom to enjoy personal time. When students are required to engage in collaborative e-learning, such differing cultural backgrounds may impinge on the expectations of when and why online collaboration should be engaged in, and what underlying motivation exists.

Tylee (2001) also suggested the traditional assignment of gender roles within Hofstede's femininity versus masculinity cultural dimension might also play a significant part in online engagement. Hofstede sees masculine cultures as maintaining the traditional gender distinctions of feminine orientation to domestic life, children, and caring, as opposed to masculine roles of assertiveness and competition; while feminine cultures tend to discard these distinctions. Masculine cultures may engage well in learning that requires exploration and allows control, but may be less likely to be comfortable with cooperative learning. On reviewing the literature it appears that this assumption may be culture dependent and possibly altered by cultural and attitudinal changes over time (Higgins, Smith, & Storey, 2010); however the often cited Jackson, Ervin, Gardner and Schmitt (2001) noted that women were more inclined to enter into dialogue via the Web than men. The researchers examined the internet use of 630 undergraduates (403 women, 227 men; mean age 20 years). By separating Internet use into web and email search functions the researchers identified an information or communication motive for accessing the Web. The results showed that men used the web database search functions more than women (suggesting men wanted to gain information without requiring communication) and that women displayed a communication motive and used the discussion board facilities far more than men. in a more recent study (Guàrdia, Maina, & Sangrà, 2012) found that in such gender related arguments, there was little difference in the way male and female educators use information technology to teach, whilst Suri and Sharma (2013) noted the opposite to the Jackson et al. findings with more male than female study participants accessing the internet for communication purposes and blogging.

Tylee (2001) developed similar considerations for Hofstede's uncertainty avoidance and long-term versus short-term time orientation dimensions with regard to the amount of choice within learning a student or educator might prefer, and the length of time allocated to learning outcomes. These dimensions aligned with the work of Porcaro (2011) who explored the idea that the views of students from developing countries

may be culturally shaped by predominantly instructivist educational philosophies. For Porcaro, students and educators will either accept or reject pedagogical misalignments with their own cultural and epistemological beliefs depending on a number of factors including academic habits borne of past experiences and learning strategies, predisposing knowledge and academic skills.

In addition to individual cultural differences, the organisational culture also has a significant effect on universities' adoption of e-learning (Cook & Crawford, 2008; Nagunwa & Lwoga, 2012; O'Neill, Singh, & O'Donoghue, 2004). Following an exploratory study using 36 semi-structured interviews across five large UK universities, Hardaker and Singh and (2011) noted the need for senior university managers to address what the authors identified as a gap between the 'local context' including the attitudes and beliefs of educators, and the 'top-down' strategic direction set by the senior management teams.

Before e-learning pedagogy can be explored further, a definition of e-learning is essential. The next section will briefly consider educational philosophies supporting e-learning before discussing e-learning definitions, and reviewing influential e-learning models.

2.5 Clarifying the term e-learning

2.5.1 Philosophical underpinnings

The rise in e-learning has required an epistemological shift in HE teaching paradigms from objectivist and instructionist perspectives, to constructivist and social constructivist approaches to learning (Dickey, 2006; Moule, 2007; Porcaro, 2011; Race, 2010; Wenger, 1998). As noted in section 2.1, since constructivists believe that knowledge is constructed rather than transmitted, the role played by learners engaged in e-learning along with the opportunities afforded them to explore and interact with differing resources, makes e-learning an ideal learning medium for constructivist educators wishing to offer learning materials which match learning style preferences.

As discussed earlier however, a social constructivist perspective requires a definition of e-learning in terms of a process driven by communication, collaboration, and social

construction of meaning (Childs, Blenkinsopp, Hall, & Walton, 2005; Salmon 2003; Means, Toyama, Murphy, Bakia, & Jones 2010) as opposed to a view of e-learning as an isolated activity where the learner is still potentially directed by an educator to engage with often technically sophisticated computer mediated exercises, acquire and read information, and engage in active learning exercises in isolation from peers. Although opportunities for online collaboration and discourse via discussion boards and web-blogs with other students and tutors allow learners to develop collaboration and group working skills, share information, improve understanding and reflect on practice (Casimiro, MacDonald, Thompson, & Stodel, 2009; Styles & Lewis, 2005), many of the above social constructionist pedagogical techniques can be facilitated without direct online communication by utilising pedagogy from the cognitive constructivist school (Abdelaziz, 2013; Meger, 2012; Piaget, 1973). Such a view suggests e-learning is capable of spanning instructivist, individual cognitive constructivist (Åsvoll, 2012; Porcaro, 2011) and social constructivist educational approaches as outlined in Table 1.

As Kirkwood and Price (2013) assert however, assumptions and interpretations about e-teaching and e-learning are frequently taken for granted, particularly with regard to underlying philosophy and pedagogy. The same assumptions intrinsically affect the research into TEL which is often carried out by the educators themselves (George & Dellasega, 2011; Peter, 2012; Petty, 2013; Sowan & Jenkins, 2013; Vogt, Schaffner & Ribar 2010; Wilkinson, While, & Roberts, 2009). Educators with a pedagogical perspective of ‘transmission of knowledge’ will gravitate toward ‘teacher centred’ approaches to education, whilst educators who consider teaching to be about ‘promoting conceptual development in learners’ (Kirkwood and Price, 2013, p. 537) will lean toward constructivist student centred assumptions of learning.

Table 1 Underpinning e-learning philosophy and pedagogical approaches

Aspect	Instructivism		Constructivism	
	Behaviourism	**Cognitivism**	**Cognitive Constructivism**	**Social Constructivism**
Theorists	e.g. Watson and Skinner	e.g. Dewey	e.g. Piaget	e.g. Vygotsky
Ontology	Objectivist and Realist	Objectivist and Realist	Can range from positivist to radical constructivist	Individually verified or socially constructed
Epistemology	Empiricism	Empiricism to Rationalism	Rationalism	Ranges from empiricism to knowledge building
Learning theories	Stimuli and response, followed by feedback causes changes in behaviour	Importance of short and long term memory, and use of schema in new situations	Engagement with others ***or*** with computer based exercises to construct personal meaning	Constructing intersubjective meaning with more knowledgeable peers
Pedagogical goal	Efficient knowledge transfer	Efficient knowledge transfer	Developing and interpreting knowledge	Developing flexible thinking and practices.
Pedagogical Practices	Computer aided, sequenced exercises with behavioural Objectives & feedback	ınstructional design using advanced organisers, concept maps and learning hierarchies	Personal discovery learning, with negotiated objectives and use of multiple online resources	Anchored instruction with problem-based, or inquiry-based learning collaborative groups.
Educators Main Role	Educator / computer centred control of instruction, process and content	Educator / computer centred control of instruction, process and content	Ranges from guiding through minimal online instruction to facilitator of resource access	Role as online mentor and facilitator of a virtual community of learning
Learners Main Role	Passive recipient of instruction and knowledge	Passive recipient of instruction and knowledge	Active / reflective constructor of knowledge & centre of learning	Centre of learning and participant in community

Adapted from Porcaro, (2011. P 41)

2.5.2 Definitions of e-learning

Most dictionaries would consider defining a word as giving the exact meaning, yet when attempting to define e-learning it becomes apparent that the term was often implicitly shaped by underlying educational culture, educational philosophy, and pedagogy (Alzaghoul, 2012; Martínez, Miláns del Bosch, Henar Pérez Herrero, & Sampedro Nuño, 2007; Nagunwa & Lwoga, 2012). These often implicit assumptions of teaching and learning intrinsically affect the educational expectations of students, educators and educational researchers, (Kirkwood & Price, 2013). Definitions of e-learning have developed over the last decade as shown below, from a focus on the medium used for the technical transmission of information such as:1)

> *"the process of extending learning or delivering instructional materials to remote sites via the Internet, intranet/extranet, audio, video, satellite broadcast, interactive TV, and CD-ROM"*
>
> (Holsapple & Lee-Post 2006, p 68)

2) Consideration of the differing processes involved in authoring and delivery such as:

> *"e-learning is the continuous assimilation of knowledge and skills stimulated by real-time and interactive learning events – and sometimes knowledge management outputs – which are authored, delivered, engaged with, supported and managed using Internet technologies"*
>
> (Dark & Perrett , 2007, p. 90)

3) A progressively more constructivist, student centred interpretation of e-learning as UK digital communications networks have continued to improve:

> *"Technology enhanced learning are learning activities that are mediated, supported or facilitated by information and communications technologies (ICTs)"*
>
> (Plesch, Kaendler, Rummel, Wiedmann, & Spada 2013, p. 92)

4) Taking account of increasing use of mobile technologies:

> *"E-learning is an approach that facilitates and enhances learning through the use of computer and communication technology, such as personal computers, digital televisions, mobile phones, internet, email, and*

> *collaborative software. It can be synchronous, asynchronous, instructor-led or computer-based or a combination. Facilitation of learning in such environments is enhanced and made possible through the use of computer technology and communication technology that can include learning management systems and virtual classrooms"*
>
> (Keengwe, Onchwari, & Agamba 2014, p.887).

If this later view of e-learning as predominantly constructivist rather than instructivist is accepted, so the importance of online communication now appears a central tenet of what e-learning is; however terminology remains problematic, with the name 'e-learning' being interchangeably used with the term 'online learning' when defining constructivist underpinned social construction of learning mediated through information technology. This is evidenced by writers including Sword, (2012); Grosso, Smith and Grosso, (2012), and Gallagheret al. (2009) using the term online learning when writing on constructivist pedagogy and communication issues, whilst authors such as Bowles, (2004); Dailey-Hebert & Donnelli, (2010), and Keengwe et al., (2014) writing on the same subject, but using the term 'e-learning'.

This distinction is important as simply being 'online' does not always mean the underlying e-pedagogy draws on constructivist theory and social interaction. Many researchers of e-learning in HE note online instructional design based on instructivism, with little or no use of communication or social interaction (Abdelaziz, Samer, Karam, Abdelrahman, 2011; Lambropoulos, Faulkner, & Culwin, 2012; Moule et al., 2011; Porcaro, 2011; Stewart, Schifter, & Selverian, 2010 to list but a few). It appears from the findings of such researchers that established and effective 'e-learning' models exist that utilise instructionist paradigms and knowledge management of pedagogically neutral learning objects (Asgarkhani, 2004, 2012; Dalsgaard, 2005; McVeigh, 2009). These approaches to e-learning focus on the distribution and presentation of educational content for the student to engage with, often independently of an educator (Brown, 2006; Ritchie, 2011). Students are therefore facilitated to search for, identify, manipulate and critique information and knowledge without the requirement to engage in 'online' discussion, (Race, 2010). Over a decade ago, Mehdi Asgarkhani (2004) highlighted the importance of establishing the difference between e-learning and knowledge management borne of the organisational theories of Davenport (1994). If

e-learning is considered to have a constructivist foundation, knowledge management can according to Asgarkhani, be considered pedagogically neutral, and harnessed as a method of acquiring, retaining, storing, distributing and generally using knowledge. According to proponents of knowledge management, computer aided learning should not have to rely on pedagogy and guided instruction, but can rely on clearly structured information to help people learn through their own processing of the information provided (Asgarkhani, 2004; Holsapple & Lee-Post, 2006). These educationalists would argue for example, that they do not need to teach students the stages involved in decontaminating a piece of equipment, but only where to find the stages. Knowledge management forms of e-learning do not reject the use of online communication or sharing of knowledge through communities of learning, but unlike constructivist views of e-learning, neither does it require such engagement.

Having identified and clarified definitions of constructivist driven e-learning as opposed to e-learning facilitated through pedagogically neutral forms of online information management, a third term worthy of consideration is 'blended learning'. The term blended learning has been criticised as being considered by many HE lecturers as no more than the mixing of computer facing e-learning directed activities with face-to-face student /teacher contact sessions (Adams, 2003; Al-Huneidi & Schreurs, 2012; Jonas & Burns, 2010); whereas Alonso, López, Manrique, and Viñes (2005), Allen (2007) and Owens (2012) advocate that the 'blend' could contain several different event-based activities, including self-paced learning, student controlled learning, educator directed learning, bridging exercises, synchronous and asynchronous interactive collaboration, and face-to face classroom discussion. This is an important distinction, as Aczel et al. (2006) note that in their review of 25 HEIs, blended learning was overwhelmingly the preferred teaching method (n=23) over purely online (distance) delivery. Almost a decade later, researchers are still noting strong preferences for blended learning approaches by educators and students, over purely e-learning engagement or fully class based education (Owens, 2012; Petty, 2013; Yen & Abdous, 2011).

2.6 Relevance of educational philosophy and e-learning definition to instructional design.

Since the 1970s when computer aided learning first began to spread across HE, academics have been engaged in modelling the implications for pedagogy. When exploring the use of computer aided learning in education, Rusby developed a classification system for computer aided teaching software packages using four categories: instructional, revelatory, conjectural and emancipatory (Rusby, 1979). For Rusby, the instructional paradigm was based on behaviourism and used techniques such as breaking down learning into readily understandable, sequentially ordered steps, tested through frequent objective assessment. According to Rusby and other e-learning educators, this form of computer aided learning has the potential to replace the educator in certain situations, and might prove particularly useful for novice students or those with no prior knowledge of the subject, (Adams, 2003; Moridis & Economides, 2008; Rusby, 1979). However, more recent researchers point out there is little evidence to suggest computer aided learning alone is as effective as a blended learning approach, which is often preferred by students, (Daunt, Gladman, Blundell & Conroy 2013; Petty, 2013). Instructional design examples of Rusby's revelatory paradigm included discovery activities, possibly making use of 'on screen' simulated experiments or programmes to test decision making. The conjectural paradigm made use of similar exercises to the revelatory paradigm, but allowed greater student control of how they learn through virtual experience, such as designing their own virtual experiments or scenarios for later critique in class. The final emancipatory paradigm related to when the computer was purely a tool aiding the students work, such as when used to search databases, carry out calculations on a spreadsheet or format tools on a word processor.

Interestingly, given the date and the language in which Rusby's paradigms were written, they were not purely behaviourist, and the locus of control not always with the computer or programme developers. Although there is little direct reference to studen participating in group communication (unsurprising given the internet was yet to be developed), commentators such as Salmon (2000) Adams, (2003) and Moule (2007), Moule et al. (2011) note that Rusby's paradigms and instructional design examples can be reflected against levels of student control and principles of

educational psychology, and considered to span from behaviourism through to constructivism, as Figure 1 demonstrates.

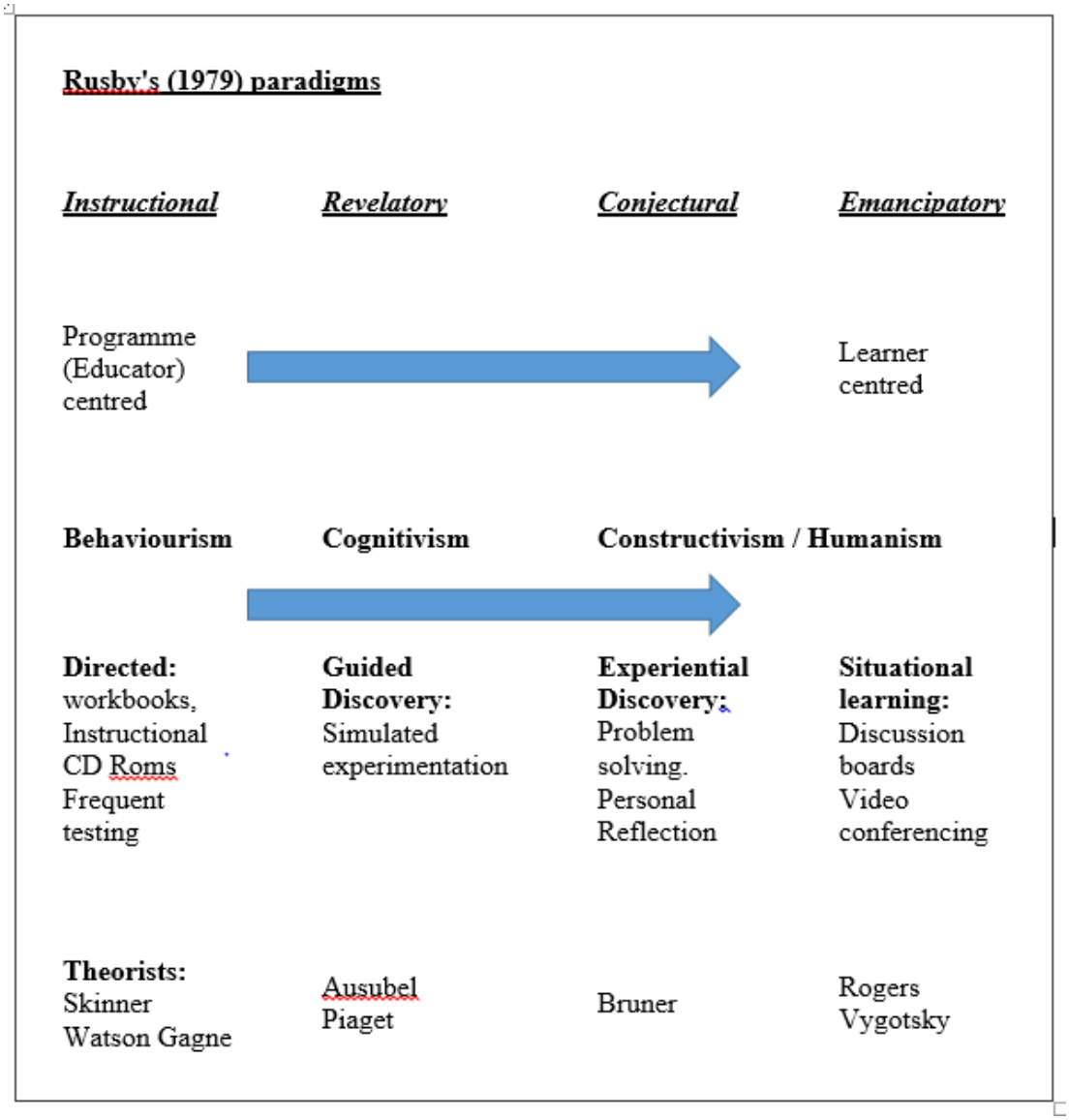


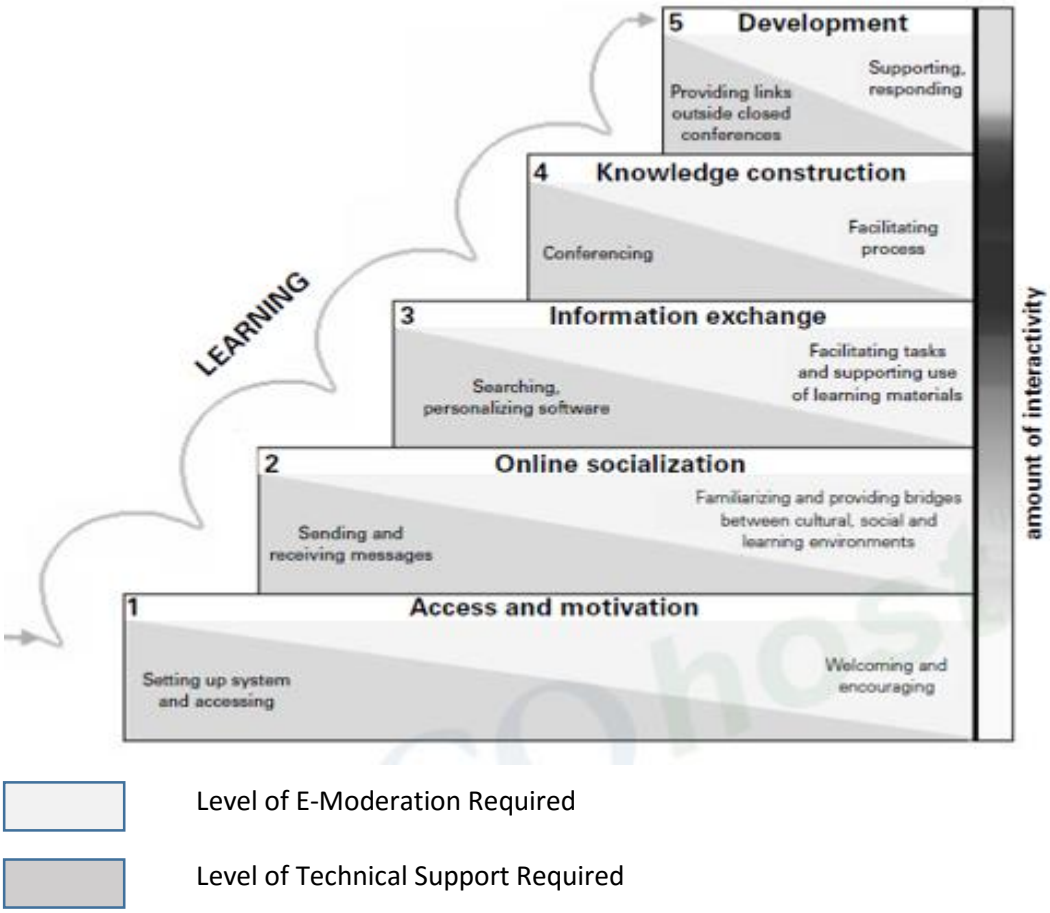
Figure 1 Rusby's paradigms and underpinning educational theories.

Adapted from Adams (2003, p.10) and Moule (2007, p.41).

The relevance of such observation is that when e-learning, students can be guided to interact with the learning software in a range of activities from passive receiver of information, through to learner focused approaches which build on previous experience and learning via individual and group facilitated discovery.

An approach to e-learning which challenges the above view and considers e-learning to be effective primarily when facilitated to develop online communities of learning is

Salmon's e-moderation model (Salmon, 2000, 2003). Within this five stage social constructivist model, Salmon proposes steps requiring key technical or e-moderation skills needed to move learners through stages of engagement to reach the top level of constructivist development, as illustrated in Figure 2.



Salmon (2013, p. 16)

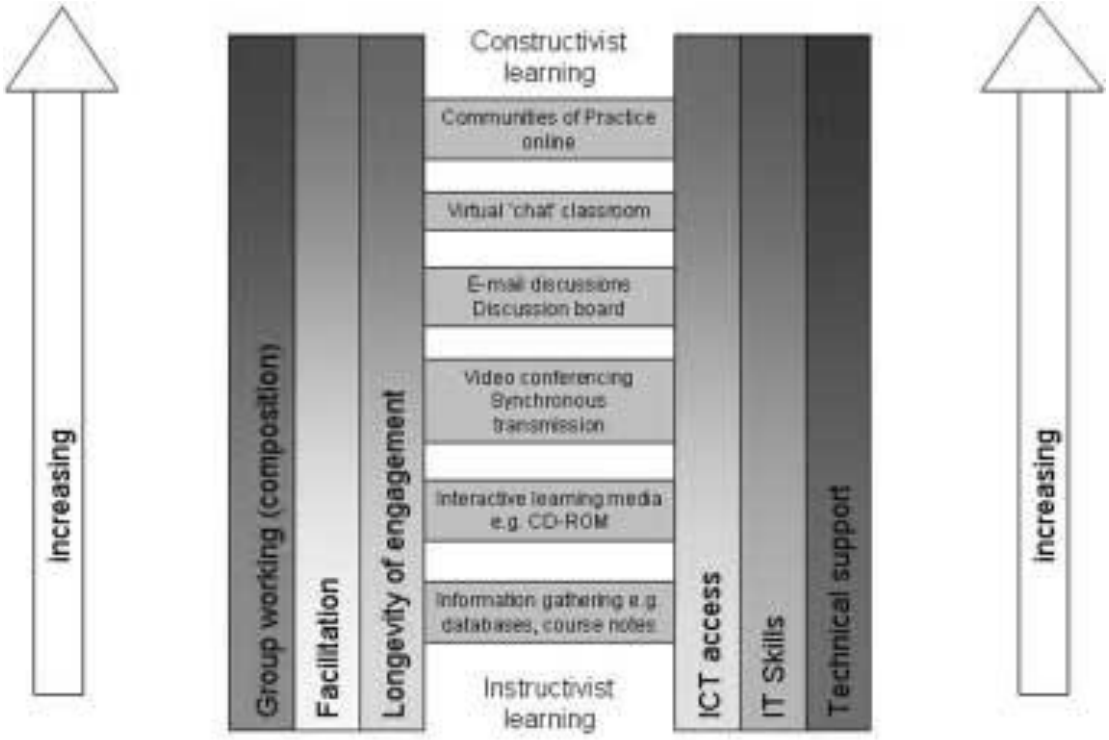
Figure 2: Salmon's 5 stage model of online e-moderation

The five stages begin with establishing access and learner motivation, followed by embedding online socialisation. A third stage of information exchange is evidenced through such activities as group searching of databases or personalising joint software, with the fourth stage being closed online conferencing restricted to the group and educator. The final level being providing links for external communities of learning.

Although criticised for ignoring other learning theories and the wide variety of potential approaches that may be used in e-learning (Moule, 2007, 2011; Nichols, 2003; Vlachopoulos & Cowan, 2010) Salmon's model has become highly influential

in shaping the way many HE institutions view e-learning (Race, 2010; Stewart, Schifter, & Selverian, 2010)

In contrast to Salmon's five-stage model, (2000, 2003) Moule's (2006) e-learning ladder (Figure 3) acknowledges a range of learning approaches, starting at the bottom 'rung' with an 'instructivist' approach, (Rusby, 1979), and moving up the 'rungs' to reach constructivist approaches. Moule's conceptual ladder contrasts with Rusby's view in that where Rusby views what he calls 'emancipatory' approaches such as use of databases and spreadsheets as highly facilitative of constructivist pedagogy, Moule places such activity on the lowest rung of her ladder due to what she considers the potential for isolated activity. Moule's higher rungs support a social constructivist approach to learning based on the theories of Vygotsky (1978) and Wenger (1998) where learning is constructed through social interaction. Within Vygotsky's (1978) theory, which is an extension of constructivism, human intelligence is viewed as originating in society through interpersonal interaction with the environment followed by a process of internalisation. According to Moule, this has been adapted for e-learning practices by ensuring that interactive communities are incorporated and supported in programme web designs alongside tests for knowledge comprehension and retention (Glenn & Moule, 2006, Moule 2011). Social constructivist theory has also produced two highly influential and widespread techniques employed in e-learning design, the first of which is anchored instruction (Bransford, Sherwood, Hasselbring, Kinzer, & Williams, 1990) whereby the pedagogy utilises problem solving or discussion around an 'anchor', which may be a theme, case study, or scenario. Learners engage in either self-directed or guided exploration of the topic to facilitate discovery and deep learning. Anchored learning is often employed alongside the second major technique of developing a community of learning, (Chalk, 2001; Gallagher-Lepak et al., 2009; Palloff & Pratt, 1999; Wenger, 1998; Wright, 2014).



Moule (2007, p. 41)

Figure 3: Moule's (2006) e-learning ladder.

Online communities of learning; also referred to as communities of practice (Wenger, 1998) or online communities of inquiry (Wright, 2014), occur according to Palloff and Pratt (1999) when students engage in online activities of common interest (such as an exercise utilising Bransford et al's (1990) anchor) a virtual community of learning is evidenced through one or more of the following behaviours or traits:

1. active interaction with course content and personal communication,
2. primarily student-to-student comments which evidence collaborative learning,
3. socially constructed meaning developed through agreement or questioning,
4. sharing of learning resources between students,
5. the posting of supportive messages and encouragement between students,
6. an openness when critically evaluating the work of others.

During a case study into whether nurses had the potential to develop an online community of practice whilst e-learning, Moule (2006) noted that although some student nurses were able to establish an online community, others were not, with challenges being identified as gaining sufficient access to the internet and issues of online socialisation, trust and sustaining commitment.

Having reviewed relevant e-learning instructional design, a closer focus will now be given to e-learning pedagogy within healthcare education.

2.7 E-learning and healthcare pedagogy

The nursing profession has seen extensive changes in pre-registration nurse preparation, initially stemming from the Briggs Report (DHSS, 1972), and the report into nurse education leading to the first Project 2000 curricula (United Kingdom Central Council for Nursing, Midwifery & Health Visiting (UKCC), (1986) This report was instrumental in the move from a vocational apprenticeship based training overseen by service providers, to a higher education diploma level professional programme developed by educationalists (Jowett, Walton, & Payne, 1994). Educationalists advocated a health-orientated paradigm, guided by social and psychological theories and applied through pedagogy more in keeping with the aims of higher education. By the mid-1990s all nurse education programmes were delivered by universities, with many providing degree level preparation for registration. The new paradigm was not without its critics however, and in 1999 a department of Health report introduced a competency outcomes based curriculum, over concerns for registrant fitness to practise (department of Health, 1999; UKCC, 1999). In 2010, the Nursing and Midwifery Council mandated that nurse preparation programmes must have a degree as the exit point (NMC, 2010).

The journey taken by the nursing profession is not dissimilar to those of healthcare programmes and each paradigm and curricular re-evaluation has an inevitable effect on undergraduate pedagogy and course design (Petty, 2013). The 2010 Standards for Nurse Education, were the first to allow significant preparation hours for simulated practice, and to expect undergraduate learning outcomes relating to information technology (NMC 2010), allowing HE faculties greater freedom to explore the possibilities of e-learning.

For professional healthcare education, as with any HE programme, clarifying a common understanding of the underpinning pedagogy and instructional techniques involved in e-learning is important. Healthcare practitioners such as nurses, physiotherapists and medical students must be able to solve problems, think creatively,

be morally decisive, continually update their knowledge and skills and be able to analyse and critique research findings relating to clinical practice (NMC, 2010; General Pharmaceutical Council (GPhC), 2010). Humanist learning theories and constructionist pedagogy which assume and facilitate a student-centred and self-motivating predisposition should prove effective for educating healthcare professionals via technology enhanced methods (CFH, 2007; Cooper & McConnell, 2000; Daunt et al., 2013; McIntosh, 2011; Petty, 2013; Salmon 2000).

Constructivist educational philosophy should therefore have significant effect and benefit on the undergraduate pedagogy of healthcare educators and the learning engagement of students, and challenge previous teaching methods borne of an instructivist paradigm (Porcaro, 2011; Stewart et al., 2010). An instructivist paradigm considers passive reception of educator-transmitted and controlled knowledge which is then assessed through strategies requiring student recall of memorised information to be a well-formulated, didactic and valid form of education based on proven practice and science (Meyer, 2009; Tobias & Duffy, 2009). Instructionist education therefore assumes the educator and students all share a similar positivist ontology and epistemology (Jonassen, 1991). For researchers such as Moule et al., (2010; 2011) e-pedagogical practice within undergraduate nursing programmes remain heavily influenced by instructivist use of technology due to the longstanding dominance of an overarching health profession preparatory instructivist paradigm, with constructivist approaches being championed by a limited number of HEI centres of excellence (Moule et al., 2011). The use of e-learning in healthcare undergraduate preparation is not without its dissenters therefore, with some nurse educators questioning the equity of time available and access for online resources for practice-focused healthcare undergraduates compared to the majority of university students (Sowan & Jenkins, 2013).

Studies carried out by Aczel et al. (2006); Hartley (2007), Means et al. (2010), and Yen and Abdous (2011) have noted varying levels of enthusiasm for, and use of, e-learning. For some educators, e-learning promises to free healthcare educators from delivering some didactic contact sessions which require transmission of largely factual information, such as induction programmes for medical staff (Ali, Osborne, Nutland, & Unsworth, 2015), or clinical training (Cameron, Rodgers, Welsh, & McGown,

2014), particularly when alternated within a blended learning format (Ilic, Hart, Fiddes, Misso, & Villanueva, 2013; Lindeman, Law, Lipsett & Arbella 2015; Means et al 2010). Others view e-learning as far more of an addition to traditional teaching methods and not as a face-to-face teaching replacement (Chinyio & Morton, 2006; Natalie, 2011; Race, 2010) and argue that even when used as an addition to more traditional teaching methods, the e-learning pedagogy and class based teaching strategy behind each approach should be complementary (Chan & Robbins, 2006).

As early as 1993, Ellington, Percival and Race refer to a triangle of technology required for successful e-learning in education, namely hardware, software and underwear, with 'underwear' being the pedagogy required for effective e-learning (Ellington et al., 1993). Reynolds and Fell (2011) and others argue it is essential to identify the underpinning pedagogy of any e-learning package or module, as it should be the pedagogy that drives the use of technology in the classroom, and not the technology driving pedagogy. Mogey (1999), Salmon (2000), Moule (2006) and others however, advocate that a major advantage of e-learning is that information can be presented to students in differing formats and using a variety of pedagogical approaches to match individual learning styles. Furthermore, Adams (2003), Alonso et al (2005) and Asgarkhani (2004) consider it vital to have a clearly agreed pedagogical model during e-learning instructional design, suggesting it would be problematic for educators working within ill matched paradigms to agree on content development, student activities and module learning outcomes within an e-learning environment.

For Chan and Robbins (2006) attempting to incorporate these opposing paradigms into one e-learning module is 'the cognitive equivalent of an optical illusion' (p.494). The authors illustrated their point with reference to the well-known black and white image of either a vase or two faces, depending on perception. Their point was, only one image can be seen at any one time, and this may be true for students attempting to engage in differing exercises, underpinned by differing pedagogies and educational philosophies. Although writers such as Salmon (2003) and Villaverde, Godoy, and Amandi (2006) advocated e-learning systems that adapt to a learner's preferred learning style, it may prove problematic for healthcare students when educators try to achieve this goal by simultaneously mixing differing e-pedagogies in university,

particularly when students also have to incorporate instructional educational approaches from the practice setting into constructivist university learning experiences (Dent, 2010; Gidman, 2011).

Professional healthcare programmes such as nursing, dietetics, pharmacy and paramedicine, differ from many HE programmes in that learning is expected to take place in both the classroom and practice settings. These professional undergraduate programmes have become increasingly outcome based following several curricula reviews by such bodies as the Nursing and Midwifery Council (NMC, 2002, 2004, 2006) and are rigidly set and monitored by the various health related professional councils (GPhC, 2011; HCPC, 2014; HPC, 2009; NMC, 2010) which in turn affect underlying pedagogy, educator approaches to curriculum design, and ultimately student experience and level of engagement in e-learning.

2.8 Student experience of e-learning.

Studies exploring e-learning have identified student benefits both in terms of programme outcomes, (Daunt et al., 2013; George & Dellasega, 2011; Henning & Schnur, 2009) and student learning experience (González, 2010; O'Neill, Singh, & O'Donoghue, 2004). Other benefits include additional flexibility of study time and place (Cheng, 2013; Styles & Lewis, 2005; Wilkinson, Forbes, Bloomfield, & Fincham Gee, 2004); ease of access to learning materials (Asuncion, Fichten, Farraro & Chwoka 2010; Imhof, Vollmeyer, & Beierlein 2007; Myrick et al 2011; Prince, Cass, & Klaber 2010; Yapa, et al. 2013); plus reduced costs of travel, learning materials and child care (Concannon, Flynn, & Campbell, 2005; Jackson et al, 2001; Jonas & Burns, 2010; Salyers, 2005).

The literature further suggests e-learning applied to healthcare can promote more independent learning skills (Reynolds & Fell, 2011; Smart, Kumar, & Kumar, 2005); whilst students reportedly find online quizzes highly motivating, and value the instant feedback given, often undertaking repeated attempts until fully successful (Barron, 2006; Hoskins & Van Hooff, 2005; Nichol & Millighan, 2006; Sit, Chow an Wong 2005). An exploratory study by Clayton, Blumberg and Auld (2009) into motivational factors for post-16 students, identified engagement with e-learning was dependent on

a student's belief in their ability to manage a non-traditional class setting, along with how relevant the e-learning materials were to achieving the module outcomes and assessment. Schank, (2002) points out 'Students vie for grades and refuse to learn something if it's not on the test' (p. 253). He advocated the linking of e-learning exercises to module summative assessment. In doing so, Schank suggested students will be more highly motivated to focus on and take ownership of their own learning.

E-learning also has the potential to answer student collaboration and networking needs (Duane & Satre, 2014; George & Dellasega, 2011; Smart et al., 2005) whilst discursive use of synchronous (such as live chat rooms) or asynchronous discussion boards may have the potential to improve inter-professional healthcare student awareness and collaboration (Casimiro et al., 2009; Dark & Perrett, 2007; Janes, 2006; Williams & Lakhani, 2010). The same technology however, may also isolate and demotivate students if intimidated or marginalised by the use of that technology (Crook, 2012; Hara & Kling, 2000). E-learning structured around an individual engaging with a computer has been associated with feelings of isolation, poor time management and difficulty understanding the content, and a reluctance to engage in some forms of group interactions (Clegg, Hudson, & Steel, 2003, Sowan & Jenkins, 2013). Hughes and Daykin (2002) and Rowe (2008), also asserted that uncritical adoption of new technology in teaching in pursuit of student-centred learning can result in negative consequences for students if they are unprepared to take the required independent control of their learning, or have low technology literacy.

Since the advent of widespread and reliable access to broadband internet and an increasing sophistication of social networking and mobile computer technologies in the UK, researchers have cautioned against simplistic assumptions that all future university entrants will be fully expecting, and totally at ease with TEL (JISC 2007b). Using the internet online, collaborating via technology, engaging in interactive e-learning, and expecting an any time, any place learning experience to fit in with multi-tasking lifestyles is unlikely to be a homogenous student trait (Ali et al 2007; Alonso et al., 2005; George & Dellasega, 2011; Glenn, 2008; Petit dit Dariel et al., 2013; Prensky, 2001). The majority of young students are now alleged to have grown up in an immersive computer environment. They are stereotyped as equally comfortable socialising using a social website such as Facebook as they are interacting face-to-

face. Although this view was challenged by writers such as Clark (2009), and Crook (2012) students are now often observed coming to lectures carrying smart phones, laptops, iPads and iPods. These students may therefore have distinctive ways of thinking, communicating and learning which are likely to impact on their interaction with possibly less digitally confident teaching staff (Rowe, 2008; Underwood, 2007).

Although some studies have highlighted student desire for more e-learning opportunities (Copley, 2007; Vogt et al., 2010), Sowan and Jenkin's mixed method study of 60 undergraduate nursing students concluded on the requirement for significant and frequent contact with the lecturer via discussion boards, email, and interactive exercises in order to maintain student interest and productivity (Sowan & Jenkins, 2013). Other studies qualify such findings with the caveat that students want the benefits of e-learning, but not at the expense of face-to-face classroom learning with student peers and their educators (Abdelaziz et al., 2011; Barron, 2006; JISC, 2007b; Mogey, 1999; Moule, 2007; Saunders & Gale, 2012; Stodel, Thompson, & MacDonald, 2006).

In 2007 the Joint Information Systems Committee (JISC) explored the hypothesis that student expectations did not match what they were able to do with technology within HE, particularly in regard to available institutional support for technology enhanced learning. JISC carried out a mixed methodological study of 16 to 18-year-old, pre HE students' expectations of using information technology, both educationally and socially when in HE. The research showed that this group of new students brought inherent expectations for TEL and e-learning with them from school, but that they were uncertain as to what HEI e-learning had to offer, or how they would be expected to engage with it. Nor were this group aware of how e-learning fit into pedagogical strategies for learning. One of the most significant findings from this questionnaire was that four-fifths (80%) of the 501 respondents felt that the quality of traditional face-to-face teaching at university was more important than the IT provision, (JISC, 2007b). This view correlates with the views of undergraduate healthcare students noted in other studies (Aczel et al., 2006; Clegg et al., 2003, Johns, 2003, Sowan & Jenkins, 2013). It therefore appears that for young students, information technology competence is not a given, and e-learning is seen as a supplement to teaching, not as a substitute for the personal interaction which they expect whilst at university. JISC

(2007b) concluded there is a need to explore how students want to learn in the future and what level of e-learning students wish to engage in; a finding and recommendation echoing an earlier Sweeney, O'Donoghue, and Whitehead (2004) comparative study into university student's perspectives on the roles of tutorial participants during face-to-face and web based tutorials.

By concentrating on young, pre university student expectations, the JISC study missed the opportunity to consider students from a wider 'non-traditional' entry gate. In 2001, Prensky identified two categories of student. The first category were approximately 18-to-23 year old students, and what Prensky termed digital natives, describing them as more immersed in the digital age and having experienced more advanced technology than any preceding generation. These students often, but not always, had embedded understanding of technology's use and role in both their social and previous educational lives, and came to university expecting constant access to the internet (Prensky, 2001). This group of students were focused upon by the JISC (2007) study, however a second group of healthcare students were older, having entered their programmes by a non-traditional route such as employer secondment or mature entry programmes. These students fit Prensky's (2001) description of a digital immigrant and, according to Prensky, felt ill at ease with the use of computers, the internet and accessing 'Web 2' functionality. Although this second group are often expected to interact with technology in the same manner as the younger students focused on by the JISC (2007) study, some may have left formal education before the broadband internet revolution and have minimal computer skills (Ding, 2002). Furthermore, being socialised into a professional practice perspective, undergraduate healthcare students may often be more familiar with face-to-face teaching methods as they more easily appreciate the immediate opportunity to ask questions and clarify learning points (Chambers, 2007; Harrison, 2010; Wilkinson, Roberts, & While, 2013) and according to such authors, this vital function needs to be catered for during e-learning often by use of an asynchronous discussion board. This may well present significant challenges to nursing students, who have reported confronting computer technology to be more stressful and time consuming than achieving the actual intended learning outcome (Atack & Rankin, 2002; Moule at al., 2010) whereby a lack of prompt unambiguous feedback and technical problems account for a significant source of student distress

(Green, Voegeli, Fitzsimmons, Knowles, Harrison,& Shephard, 2006; Kiteley & Ormrod, 2009).

Interestingly JISC also found that younger students on starting a programme of study also expect traditional face-to-face methods of educator and student interaction to be the main learning strategy that would be employed at university. Therefore, a key conclusion from the JISC (2007) study was, although positive about technology and expectant of its provision, students perceive TEL as no more than a tool and a means to an end, and not as a substantive part of the university learning experience. Students did not expect the technology to obscure what they see as the main benefits and attraction of a traditional university – human interaction and learning. This finding was further noted in a significant literature review by Petty (2013) who reviewed the effectiveness and value of TEL packages to UK healthcare students, and in work by researchers such as Kirkwood and Price (2013) Moule, et al., (2011); and Plesch et al (2013).

The sheer volume of available information facing students searching the World Wide Web, along with self-perceived technological incompetence often leads to low levels of confidence, uptake and enjoyment (Childs et al 2005; Lam, McNaught, Lee, & Chan 2014; Loke, 2007). Additionally, although several writers cite student preference for 'any time, any place mobile learning' (Chen, 2015; Johns, 2003; Shih, Chu, Hwang, & Kinshuk, 2011; Vogt et al, 2010). Kazlauskas and Robinson (2012) echo Lee and Chan (2007) and other researchers and caution against such generalisations, reporting that many students failed to use e-learning materials outside of university time and location as expected, preferring to learn in face-to-face environments and read whilst in the campus library (Kazlauskas & Robinson, 2012) or listen to podcasts on a campus based PC, during normal campus hours, (Lee and Chan, 2007). For healthcare students a possible reason for this behaviour was external life demands outside of the protected periods when students are committed to physically attending university to engage in study (McVeigh, 2009; Moule et al., 2011; Williams, Nicholas, & Gunter, 2005) and having to compete with family members for access to a computer when at home (Clarke, 2009).

Despite the recent evidence suggesting gender differences may no longer disadvantage female students from the perspective of inclination and capability to engage with

information technology (Guàrdia, Maina, & Sangrà, 2012), Koch, Müller, and Sieverding's (2008) randomised control group study found that previously held stereotypical views by women of their having poor self-efficacy in relation to computers will result in female students attributing faulty or ineffective hardware or software to their own perceived inadequacies (as opposed to males who blamed the equipment!). Furthermore Caspi, Chajut, and Saporta (2008) identified that men tended to capitalise speaking on a synchronous discussion board, whilst women favoured written messaging. This may have implications for healthcare programmes with a predominantly female student body. Additionally, a mixed methods study by Vandenbroeck, Verschelden, and Boonaert (2008) suggested that women may be at risk of being excluded from adult education programmes which use e-learning when they have low economic status and a lack of home computer equipment and internet access. These issues may have implications for some non-traditional female students entering healthcare programmes such as nursing, social work or dietetics.

In the context of continuing professional development, as opposed to professional preparation of healthcare practitioners, Docherty and Sandhu (2006) carried out a mixed method retrospective study of the perceived barriers and facilitators of 75 practice nurses engaged in an e-learning (distance) diabetic course. Findings were then compared to a comprehensive literature review. Results identified differing levels of motivation, expectations and support required. Three key barriers emerged: inadequate support, limited personal and material resources, and course demands on time. Facilitators included flexible integration with existing work/life balance, personal confidence in information technology literacy, and understanding of the wider information technology learning outcome to improve student computer skills. The extra demands on the educator when e-moderating were highlighted, although the authors also concluded that high levels of student support were essential for success. The authors recommend e-learning courses should make the additional benefits of increasing IT ability a formal learning outcome and assess student computer literacy skills prior to starting the course, particularly with regard to internet searching. Interestingly for this study, the strongest recommendation from Docherty and Sandhu (2006) was for further research focusing upon the perspectives of teaching staff, including barriers and facilitators to the implementation of e-learning.

2.9 Lecturer's perceptions and reactions to e-learning

Far fewer studies focusing on healthcare educator views and experience of e-learning were found in comparison to research into student expectations, particularly in regard to healthcare educators within the UK higher education field. This observation was noted and supported in literature reviews from Wright (2014), Vlachopoulos and Cowan, (2010), and Petit Dit Dariel et al. (2014). Educator views and attitudes toward TEL were seen as important factors in whether educators engage with, or reject e-learning (Birch & Burnett, 2009; Hardaker & Singh, 2011). Several studies have shown healthcare educator attitudes to TEL to be largely positive (Blake, 2009; Glenn, 2008; Lonn & Teasley, 2009; Robert, 2003), particularly in regard to the use of blended learning teaching strategies (Abdelaziz et al.., 2011; Childs et al 2005; Lonn & Teasley 2009; Strong et al., 2012: Sung, Kwon, & Ryu, 2008)

When expected to utilise e-learning, however, educator fears of inadequate technological or e-moderation skills are common (Hughes & Daykin, 2002; Jenkins et al 2011; Owens 2012, Wilkinson et al., 2013). Green et al's (2006) case study highlighted that some nurse educators struggled to author e-learning materials with little or no support; and concluded that such an experience by lecturers when first experimenting with e-learning is likely to adversely affect their success and confident adoption of the teaching method. The level of educator training and support is important, as a survey of 529 HE lecturers concluded that e-learning training, specific to the university context and information technology used, as opposed to just general e-learning principles and facilitation technique, is required for successful uptake by educators (Owens, 2012). Fears over falling classroom attendance through overly flexible access to course content when using video podcasts of lectures (Lee & Chan, 2007) were found to have no basis during a similar study in the same year by Copley (2007), whilst increased workload proved one of the most common concerns for HE educators (Blake, 2009; O'Neill, Singh, & O'Donoghue, 2004); with experienced educators engaged in e-learning identifying that the time required to develop effective e-learning materials and maintain student engagement in online discussion was often underestimated by university managers (Cook & Dupras, 2004; McVeigh, 2009; Sword, 2012).

A further common concern expressed by educators was the increased potential for academic malpractice and superficial learning among the information technology aware students (Gupta & White, & Warmsley, 2004; Reime, Harris, Aksnes, & Mikkelsen, 2008; Stephens, 2004). Although, Glenn (2008) also noted that despite such concerns, 75% of teaching staff who responded to an Economist survey also felt that regardless of the increasing options for technology-enabled online collaboration tools, the most likely benefit of technology was still the expanded and instant access to educational and reference resources that accessing the World Wide Web provided.

According to Ng'ambi, (2013), there appears to be an increasing contrast between the newer technology students own and use outside university when accessing the internet and social media, and the technology supported and used within university for e-learning. Ng'ambi argued that this shortfall was resulting in educators feeling pressured to continually keep pace with their students, and resulted in concerns of pedagogical uses of information technology being perceived by students as out dated and ineffective, whilst university data search resources were again seen as significant and valuable.

A survey using 125 questionnaires from 25 Spanish schools of nursing and healthcare by Fernandez –Aleman, Sanchez, Lopez, & Sanchez (2014) also found positive attitudes to e-learning, and on exploring non-engagement by educators found no correlation with educator age and ability to use IT. However a correlation did exist between older educators and less inclination to adopt new technological teaching methods. Fernandez-Aleman et al also found that over 60% of educators prolonged their working day by connecting to a university server from home, whilst a further 72% used IT for data searching and emailing both personally and professionally. Although educators rated the benefits of e-learning highest in accessing materials and flexibility of working, they rated it poorly as a means of saving time, often reporting it time-intensive. The most notable inconveniences reported were problems of dispersion of information to students and the time pressures of needing to continually update online material and maintain an online presence (Fernández-Alemán et al., 2014).

Within e-learning, maintaining student motivation is central to preventing students from continually delaying study to the detriment of their learning. Therefore, e-learning practice often places the onus on the lecturer to maintain contact and support their students via a discussion board (Cowan & Vlachopoulos, 2010; Packham, Jones, Thomas, & Miller, 2006; Salmon, 2003). This requirement may however present a conflict of opinion as to what the educational expectations of adult learners are. Although educators perceive in a positive light the increased flexibility provided by e-learning of where and when a student might choose to learn, some concern exists that universities may expect teaching practices to become similarly flexible, with educators logging on periodically during evenings and weekends (Alqurashi, 2011; Janes, 2006).

It would appear that both students and educators need to understand their roles and responsibilities incumbent in the pedagogical design and e-learning strategy. Any ambiguity can lead to frustration and annoyance for both parties. Martinez, Bosch, Henar and Nurio (2007) identified students wanting more feedback and support from the facilitators, yet the facilitators feeling that the students should to be more independent, solving problems through the support of their peers. Plesch at al (2013) also explored reasons for educator non engagement in TEL through use of a three year international Delphi study. Plesch and colleagues identified five broad areas of tension felt by HE lecturers from 16 member countries when considering use of TEL within their teaching. Arguably, the most significant being the tension between the perceived need for a focus on processing of critical information (often expected by a validating healthcare professional body) and the more open and student-centred and student-controlled learning opportunities afforded by TEL. Furthermore, educators expressed concern over adopting continuous innovation in the classroom at the expense of tried and trusted methods (Plesch et al., 2013). Plesch's study confirmed earlier findings that e-learning would not become wholeheartedly adopted by educators until they felt it personally worthwhile to do so (Chinyio & Morton, 2006). Race (2010) agreed and stated that educators within the United Kingdom remain unconvinced of the benefits of e-learning beyond teaching process issues such as meeting the United Kingdom National Student Survey target for timely student feedback.

Although useful in highlighting the inherent tensions experienced by teaching staff when adopting e-learning practices, Plesch et al.'s, (2013) study design recruited

participants already significantly engaged in e-learning practice, and did not consider those educators who felt unable to or refused to engage. Nor did the study explore the views of educators engaging at a less strategic level. Even within this group of e-learning 'experts', when comparing educator reported pedagogical beliefs against self-reported teaching practices, Plesch noticed a shortfall in actual practice, finding online learning environments were underutilised, with e-pedagogy falling short of expressed beliefs.

A literature review by Singh and Hardaker (2014) examined barriers and enablers in the adoption of e-learning considering over 300 papers. The study concluded that many of the facilitators and barriers discussed in the literature over the past 15 years still persisted, yet cautioned about repeatedly researching the factors at either a macro (institutional) level or a micro (individual educator) level. The authors called for further research that would holistically explore the complex social reality that exists within higher education (Singh & Hardaker, 2014). It is worth noting that what Plesch et al. (2013) and others failed to consider, and what Singh and Hardaker (2014) in part alluded to, was the added complexity of cultural norms and opinions discussed earlier when considering the work of Hofstede (1980) on employment culture and Tylee's (2001) application to the HE arena. The potential effect of culture on educator (and student) e-learning engagement appeared particularly important when considering underlying e-pedagogy in healthcare related education. Researchers such as Porcaro (2011); Moule, (2010) and Duane and Satre (2014) concluded that for healthcare educators to design and maintain constructivist as opposed to instructionist e-learning, they must encourage students to question their assumptions and support the knowledge construction process. As noted by both Tylee (2001) and Porcaro (2011), behaviourist educators from instructivist cultures delivered predetermined professional knowledge online in a controlled fashion followed by measurement of retained facts or psychomotor skills; whereas constructivist educators preferred e-learning which facilitated an online community of learners who uncovered meaning rather than just retain content. The pedagogical transition may prove difficult for educators trained and educated via behaviourist or cognitive approaches which have dominated healthcare education culture and professional preparation in the past (Blake, 2009).

2.10 Chapter summary and conclusions.

This literature review has examined e-learning in relation to healthcare education. Following a consideration of the relevance of learning theory and learning style to e-learning, definitions of e-learning and blended learning were clarified. When exploring the relevance of pedagogical theory and e-learning to healthcare related undergraduate preparation, differing models of e-learning pedagogy were critically explored. The models ranged from pedagogically neutral knowledge management systems, through instructivist, behaviourist and cognitive educator-centred approaches to content delivery and toward a humanist and constructivist e-learning paradigm centred on student-control of learning and online social construction of meaning. The literature lacked studies which explored the implications of the differing pedagogical models in relation to healthcare educator and student experiences of e-learning. Studies which reviewed student and educator experience of e-learning presented a generally positive attitude toward TEL, created by identified benefits such as ease of access to learning materials, flexibility of study, and potential reduction in costs. The positive attitudes appeared to be tempered by challenges such as pressures of time management, concerns of personal technology literacy and differing pedagogical beliefs. It was in relation to educator pedagogical beliefs and the effects of educational culture on e-learning that the literature review provided least clarity and suggested the greatest potential for learning why educators and students engage in e-learning as they do.

A further aim of this literature review was to place the study in the wider context and identify key issues and knowledge deficits. There was far less available knowledge regarding educator experiences views and attitudes to e- learning in general, and undergraduate healthcare programmes in particular. Following calls for holistic research focusing beyond single aspects such as institutional or individual responses to e-learning or studies which separately explore student or educator experiences (Bigatel, Ragan, Kennan, May, & Redmond, 2012; González, 2010; Singh & Hardaker, 2014), it appeared justified to undertake a study with the aim of exploring the educational culture and interplay between student and educator perspectives and experiences of e-learning. A deep exploration of the above issues by means of a case study would enable further insights and add to the overall body of knowledge.

Chapter three will now provide a detailed account of the research design and underpinning philosophical position to explain and justify the approach taken.

Chapter 3: Research Method

This chapter justifies the study aims and research questions influenced by the literature review. An introduction and consideration of the conceptual framework for case study research and alignment to the author's own ontological and epistemological perspectives are given. Explanations of specific research design and data analysis methods are presented, followed by consideration of ethics and study conduct with due regard to issues of validity and rigour. The final sections outline the pilot study and the specifics of data collection.

The chapter is organised into the following subsections:

3.1 Study aims and research questions

The literature review highlighted that the concept of 'e-learning' remains open to interpretation depending on the underpinning educational philosophy, culture and pedagogy employed (Alzaghoul, 2012; Martínez, et al., 2007; Nagunwa & Lwoga, 2012; Tylee, 2001). The importance of educator and student understanding of the guiding pedagogy, aims, and objectives supporting e-learning were also highlighted (Martínez et al., 2007; Moule, 2007; Petit dit Dariel, at al., 2010; Porcaro, 2011). A key starting point for the current study therefore, was to explore if there was a common definition of e-learning for both educators and students. Since researchers such as Wright (2014), Vlachopoulos and Cowan, (2010), and Petit–Dit-Dariel (2014) commented on a lack of studies focusing on educators' experiences; a further objective of the study was to include this aspect with the aim of producing new knowledge with the potential to impact on educational practice.

In line with the level of study indicated by the literature review, the author's interest lay in undertaking an in-depth exploration of an ill-defined educational concept (e-learning) within the context of healthcare higher education. Since there proved to be few studies examining this focus, an exploratory and explanatory research design was considered justified (Andrew & Halcomb, 2008; Bryman, 2004; Gerring, 2007; Huberman & Miles, 2002, Stake, 1995). The use of descriptive and explanatory case study research has been advocated by many writers when clarification of complex issues such as e-learning within healthcare related undergraduate education is required (Bassey, 1999; Exworthy, 2012; Gibbert et al., 2008; Ridder, 2012; Thomas, 2011).

The study aims were:

1. To explore the perspectives of educators and students when engaging in e-learning within undergraduate, pre–qualification professional health related education within one university.
2. To explore the experiences of educators and students when engaging in the above e-learning context.

The term 'professional education' within this study relates to programmes leading to a registered qualification such as nursing, midwifery or other professions allied to medicine.

The research questions were devised to be broad enough to encompass the exploratory nature of the study whilst still meeting its overall aims and research objectives:

- RQ1. What definitions of 'e-learning' are held by healthcare educators and students?
- RQ2a. How do educators engage with e-learning?
- RQ2b. How do learners engage in e-learning?
- RQ3a. Why do educators engage with e-learning as they do?
- RQ3b. Why do learners engage with e-learning as they do?

Since the study focus lay beyond what could realistically be examined using positivist data collection and statistical analysis (Robson, 2011; Thomas, 2011; Yin, 2013), the research design utilised both quantitative and qualitative data collection methods in order to allow gathering of a broad range of evidence. The study aim of comparing a

variety of data formats in depth was considered best served by the use of case study methodology (Stake, 2005; Yin, 2013).

3.2 Case study method: The conceptual framework

Case study methodology can be traced back to the early nineteenth century with the first systematic single case enquiry of Victor, the 'Wild boy of Aveyron' (1788-1828) produced by the Society of Observers of Man (White, 1992). Case study methodology has its origins in social anthropology and is underpinned by naturalistic enquiry. More recently, the use of case study using mixed methods was developed in the USA within the University of Chicago Department of Sociology (Simons, 2009). Thomas (2011) explores the meaning of the English word 'case' and highlights its three meanings: firstly a box or container, secondly an event or specific situation, and finally its meaning as an argument or rationale. These defining characteristics point out the importance of a case study being focused on a clearly identifiable and finite phenomenon, which is observable and reportable over a defined period of time. Being an empirical argument, a case study also requires the researcher to justify all reasoning and conclusions from evidence drawn from empirical data (Stake, 2005; Stewart, 2012; Thomas, 2011; Yin, 2013).

Case study methodology spans traditional positivist and relativist paradigms and draws on differing ontological and epistemological stances (Noor, 2008; Ridder, 2012; Thomas, 2011; Zainal, 2007). Case study design can be single or multiple and take a deductive or inductive approach to data analysis (Cavaye, 1996; Yin, 2013), with many case study researchers considering the distinction between quantitative and qualitative methodology being a matter of emphasis (Gerring, 2007; Gomm et al., 2000; Noor, 2008; Simons, 2009; Yin, 2003). Case study researchers therefore select and combine a range of differing research design methods to collect and analyse data which focuses on the identified 'case' from several angles (Parahoo, 1997; Tight, 2009). Regardless of why a case study method is chosen, case study researchers concur on the importance of looking at a situation in its completeness, and on the benefits of systematic enquiry of complex situations (Stake, 1995; Thomas, 2011; Tight, 2009; Woodside & Wilson, 2003; Yin, 2013; Zainal, 2007).

Case study methodological approaches range from a very intrinsic focus, often employing a qualitative philosophical perspective to capture the intrinsic complexity of a single unique case (Gomm et al., 2000; Stake, 1995, Tight, 2009), through to a more instrumentalist application using quantitative or mixed methodological perspectives to gain insight into questions external to the case under study. Such instrumentalist case studies often employ multiple cases within the same study to triangulate findings (Bailey, 1992; Bassey, 1999; Blatter & Haverland, 2012; Simons, 2009; Stewart, 2012; Yin, 2009, 2013). Instrumentalist researchers such as Yin (2013) have advocated the identification of repetition and replication as a means of justifying validity and in some cases generalisability (Blatter & Haverland, 2012; Yin, 2009, 2013). Stake (1995) however, argued for de-emphasising this approach, asserting that validity is not just based on what multiple observers see via replication. Stake further argued against considering case study research as sampling research, and cautions using the methodology primarily to try to understand external phenomena, stating,

> 'the real business of case study is particularisation, not generalisation'
>
> (Stake, 1995, p.8)

If Stake's stance is accepted, case studies would not normally produce generalisations, yet Stake still advocates that persuasive and powerful presentation of an argument might yield empirically sound explanation of observed phenomenon within the particular case (Stake, 1995, 2005). Lovell (2006) argued that in-depth single case studies can provide important insights into shared situations and act as a filter for observable behaviour over time.

According to Bassey (1999), a well-structured case study should allow a researcher to:

> 'explore *significant* features; create *plausible* interpretations; test for trustworthiness; construct a *worthwhile* argument; [and] convey convincingly to an audience.' (Emphasis in original).
>
> (Bassey, 1999, p. 58)

Bassey's aspects for a well-structured case study are demonstrated in the ontological and epistemological perspectives outlined later in this chapter.

For qualitative or mixed methods case study researchers, the methodology involves the use of intuition and interpretive skills to argue a rational and defensible interpretation of the case (Bassey, 1999; Stake, 1995; Thomas, 2011; Tight, 2009; Yin,

2003, 2009). Writers such as Thomas (2011) advocated the use of abduction when analysing a case. Abduction (as opposed to induction) is articulating robust judgements and best explanations based on the facts collected which correlates with Miller and Fredericks's (1999) inference to the best explanation; and to what Bromley (1986) termed the quasi-judicial case study method. This means an approach that combines features of judicial procedure and scientific method which 'attempts to apply rigorous reasoning in the interpretation of empirical evidence systematically collected' (Bromley, 1986, p9).

3.2.1 Ontological and epistemological perspectives

Case study methodology may be applied through a positivist lens utilising purely quantitative data such as quantitative questionnaires and frequency observations (Thomas, 2011; Turner, Kane, & Jackson, 2015; Wilson, 2011; Zainal, 2007). Such case studies are underpinned by a realist ontology, defined as the view that entities exist independently of being perceived, or independently of our theories about them (Parahoo, 1997). This author acknowledged and prioritised the importance of a relativist perspective existing alongside a reality external to cognition. A relativist perspective being defined as the view that knowledge is a social reality, value-laden and formed through individual interpretation when engaged in research involving humans (Miles & Huberman, 1994).The current study is therefore orientated toward what Miles and Huberman refer to as transcendental realism whereby social phenomena exist both in the mind and in the real world, or what some researchers refer to as constructive realism (Lektorskii, 2010). Such constructivists assert that 'facts' and objects external to cognition do exist, but that it is the paradigms and way in which they are perceived and observed by individuals and social groups that change, and so consider knowledge to be constructed rather than discovered. When exploring the world of education, constructive realism aligns with a social constructivist epistemology (Cunliffe, 2008; von Glaserfeld, 1995) whereby meaning when learning is not discovered, but constructed through discourse (Crotty, 2003; Cunliffe, 2008; Denzin & Lincoln, 1994).

Prior to undertaking this study, the author considered engagement in e-learning to require an educator and student to not only undertake technical activities but interact

online to make sense of knowledge encountered. This social constructivist view of learning also required students to actively make sense of online experiences and construct knowledge through discourse. This position therefore has synergy with the constructivist epistemology underpinning mixed methods case study design. A mixed methods case study, supported through a constructivist paradigm, therefore offered a means of linking the author's own epistemological and educational beliefs when exploring both the perceptions and actual experiences of educators and students engaged in e-learning.

Epistemologically, the author also acknowledged that the construction of meaning is not always a social phenomenon, but is often as a result of individual cognition (Berger & Luckmann, 1991; Piaget, 1973; Sorden, 2005). Given the location of the case study within healthcare education and the use of individual accounts as a method of generating data, the research is shaped equally by cognitive constructivist and social constructionist paradigms.

3.2.2 Theoretical framework

According to Crotty (2003), once a relativist ontological and epistemological view is accepted, a theoretical framework which acknowledges the validity of individual interpretations of a truth is a logical progression. The theoretical approach which further shaped the methodology and data analysis was interpretivism. Interpretivism is often attributed to the original work of Weber (1864-1920) and seeks to understand and explain 'human' reality by placing oneself in the mind of another in order to consider perspectives through how that other person is interacting via language and other shared communication formats (Benner, 1985; Schwandt, 1994). Interpretivism also requires the researcher to remain cognisant that they cannot separate themselves from what they already know, requiring a continually reflexive stance (Chowdhury, 2014).

Interpretivism generally forms two methodological approaches: the generalising, 'nomothetic' stance of the natural sciences and the individualising or 'ideographic' focus of the human (or social) sciences (Crotty, 2003). In light of the ideographic and

interpretivist nature of the analytical framework, outcomes from this study are considered suggestive rather than conclusive.

The previously outlined theoretical perspective of the author affects the degree to which the case study provided an intrinsic or instrumental exploration of the topic. Since the author has stated a more intrinsic leaning, this position has major implications for the development of the research questions. Stake (1995) advocates the use of broad 'issues' as a conceptual structure when developing research questions, as opposed to hypothesis or goal statements. His argument was that the latter over-focus the research and detract from the context and circumstances embedded within the case, a point supported by Denzin and Lincoln (1994, 2003). Such researchers therefore take an intrinsic or case dominant approach to case study design, focusing on emic issues (Stake, 1995) predominantly generated from within the case. The literature review, however, identified known areas of interest potentially suggesting an instrumental or issue dominant case study approach, as advocated by Yin (2003, 2009, and 2013) and Thomas (2011). The later point accepted, robust instrumental case study design as outlined by Yin (2009, 2013) requires the availability of ideally six to eight cases, with possibly three being similar in major variables to explore practical repetition of findings, and the remainder being different in other significant variables to examine presence or absence of 'theoretical repetitions' (Yin, 2013). Since such a multiple case study design would require more case HEIs and departments than were available to the author within the locale of interest, and would require greater control of variables than would be possible in the research context, broad research questions, intrinsic to the case and more akin to Stake's (1995) 'emic' issues were developed which nevertheless allow exploration of areas of interest highlighted in the literature to be considered.

In summary, the theoretical framework in figure 4 was developed to identify the overarching philosophical and pedagogical models and theories which influenced the study. Constructivist realism was the overarching ontology (Harre 1986) applied through a social constructivist epistemology (Myles & Huberman, 1994). Thematic data analysis and the related discussion relied upon an interpretivist paradigm; whilst a focus on educational philosophy, culture and pedagogy was maintained when achieving the research aims. To ensure specific research questions were addressed

three internal dimensions, namely social, individual and organisational, were also applied.

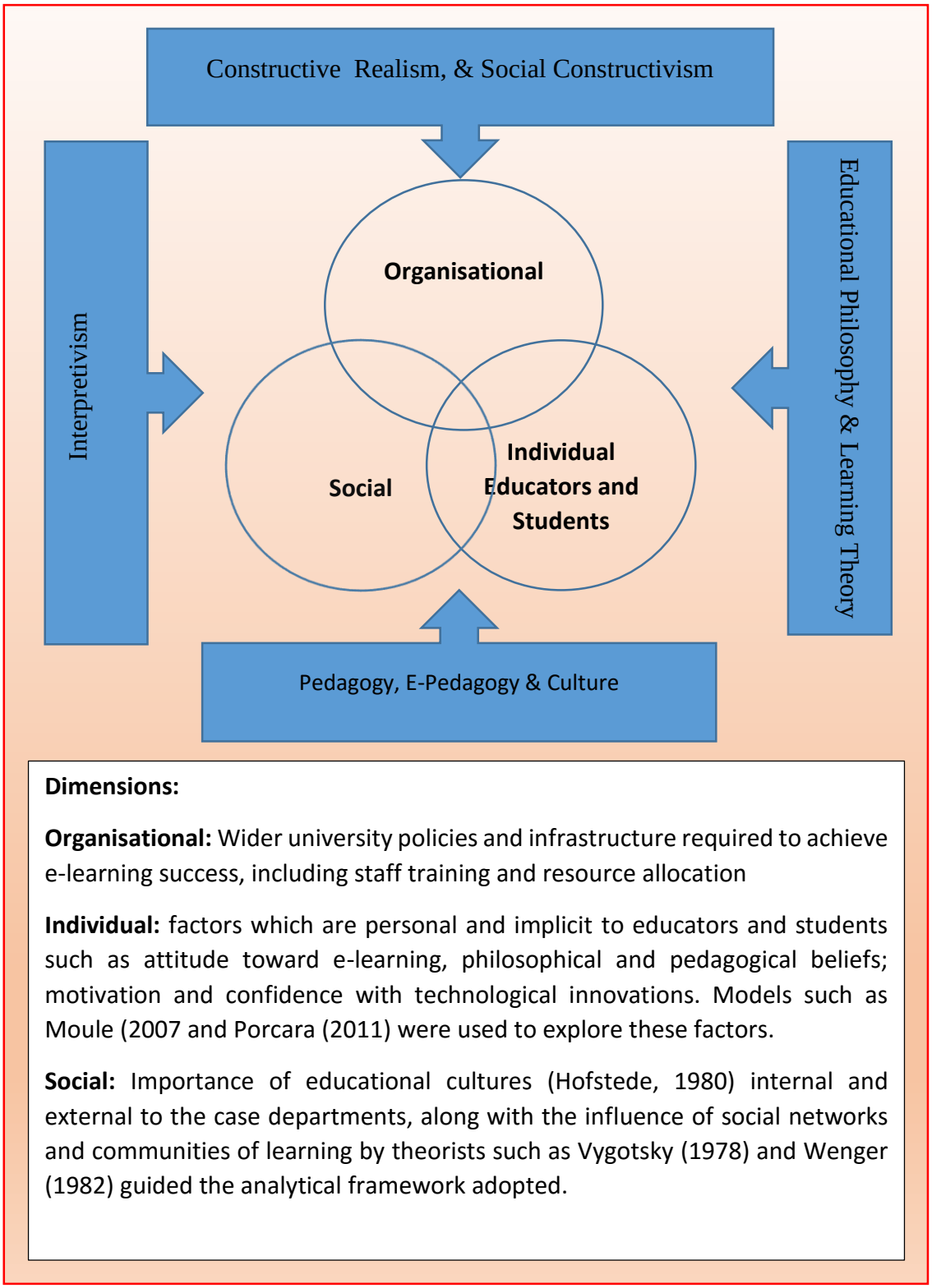


Figure 4 Theoretical framework

A strength of the case study methodology in following the theoretical framework in Figure 4 and answering the research questions was the ability to collect data on actual human activity and countable outputs, *plus* the participant views and attitudes towards e-learning. Additionally a further advantage of the case study was that the depth of focus achieved through a flexible approach to data collection allowed for areas of interest to be reviewed as new or interesting data was uncovered. This approach to case study design can be viewed as adopting a partly ethnographic stance (Gerring, 2007), in that the author attempted to reflexively report the case from the perspective of the participants in what Brewer (2000) would term their naturally occurring setting. By continually reflecting on why data appeared noteworthy or interesting to the author, the intention was to remain cognisant of any potential influence from personal beliefs or experiences and avoid confusion with what the participants were articulating (Bassey, 1999; Bryman, 2004; Gerring, 2007; Noor, 2008).

Some case study methodologies encourage the use of data collection tools from differing epistemological traditions in whatever ways the researcher feels appropriately answer the research question (Eisenhardt, 1989; Gerring, 2007). The method therefore has much in common with Levi Strauss's (1966) Bricolage theory, which facilitates empirical, evidence based research in a way that highlights how people behave and think in context. (Gillham, 2000; Warne & McAndrew, 2009). Levi Strauss (1996) considered bricoleurs as researchers who employ differing methods from possibly differing research paradigms in the same way as a 'professional jack of all trades' (p.16) and would use differing tools and materials, not necessarily specific to the task in hand to complete a job of work. In the same way, the case study bricoleur might pragmatically and eclectically mix qualitative and quantitative methods and ways of thinking in order to explore a specific issue. For example, using a quantitative questionnaire from the positivist paradigm and a focus group analysed through a qualitative process to explore the same issue of discussion board use when e-learning. Denzin and Lincoln (2000) further define a bricoleur researcher as a ' do it yourself person' (p.17) who employs whatever strategies, methods, or empirical materials that are to hand and suggest that if new tools or technique have to be invented or pieced together, then the researcher will do this. They assert that the multifaceted epistemological positions offered by bricolage research brings richer understanding of human interaction and experience, and agree that the complex focus of a study should

not be separated from the surrounding context, or the narrative used by the participants in describing it (Denzin & Lincoln 2000). This case study data collection therefore included a structured questionnaire containing a majority of closed question format often associated with quantitative methods. The study also contained a review of programme documents and archival records of department meetings using a standardised audit template; plus participant interviews and focus groups from the qualitative research paradigm. In keeping with Denzin and Lincolns' view of the bricoleur, when reviewing documents and module web spaces, the author developed a review tool to aid consistency of analysis across departments, which was based on validated models from the literature (Table 4).

Furthermore, to manage the complexity of this approach and achieve sufficient data saturation, the data shell (Yin 2009) or data corpus (Thomas 2011, Stake 1995) was developed (Table 2). Consideration was also given as to how far back in time to consider searching for institutional documentation related to e-learning within the case institution. It was felt justified to search the previous four years for institutional documentation as this matched the establishment date of one of the case departments, and coincided with the last major institutional policy review on e-learning practice in the organisation. All documents were then checked to ensure they remained current and applicable to the academic year in which data collection was carried out.

Having considered the differing approaches to case study methodology and design, the current study employed a range of mixed methodological tools to fully explore the research questions from an intrinsic case perspective.

3.3. Overarching research design

The research design consisted of the following:

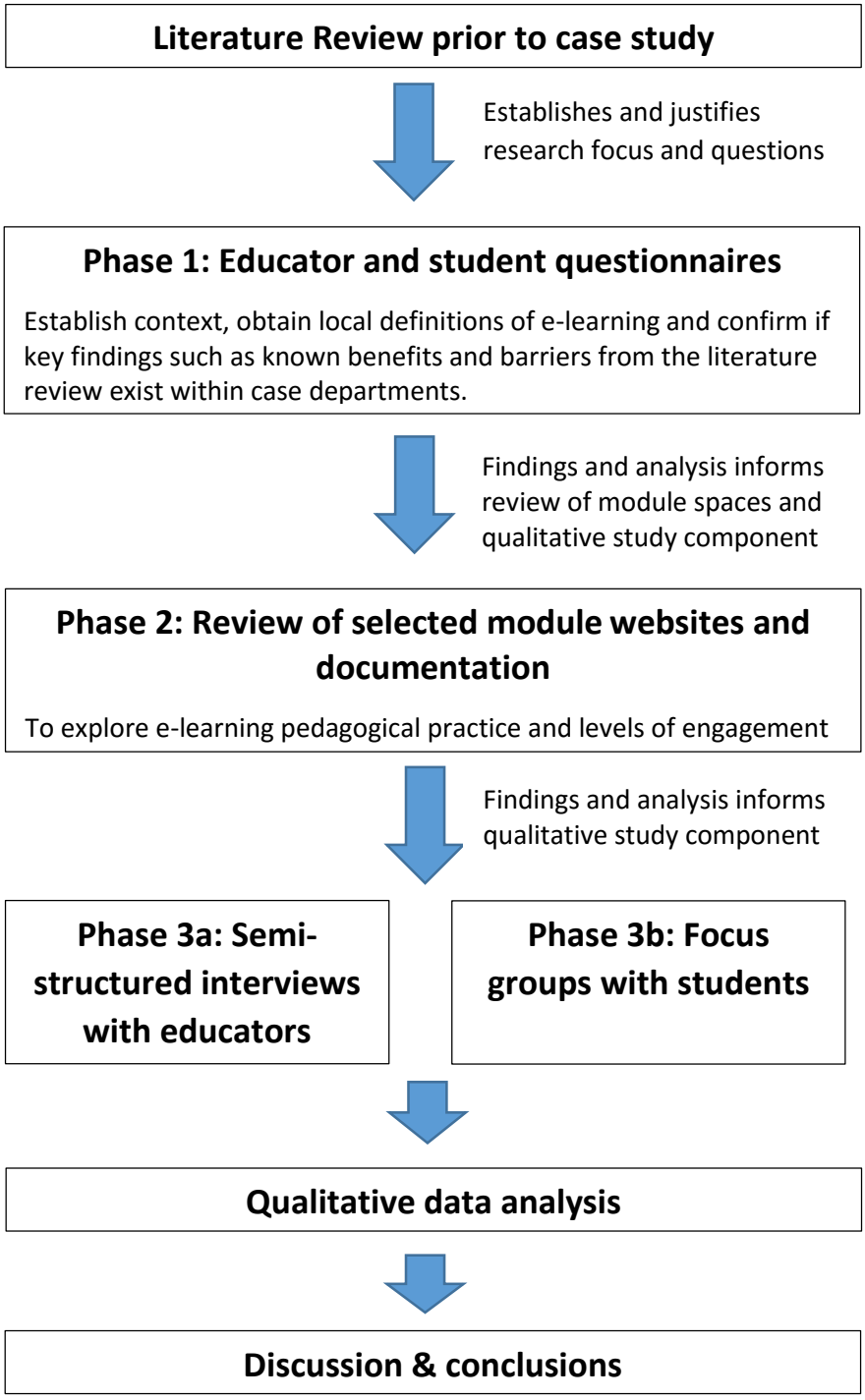


Figure 5: Research design.

Sound research design logically links the initial questions guiding the study to the data collected and ultimately the conclusions drawn (Parahoo, 1997; Ridder, 2012; Robson,

2011; Silverman, 2006). The research design achieved this aim through application of case study methods advocated by both Stake (1995) and Yin (1984, 2003, 2009), in that a defined group of undergraduate healthcare programme related educators and students from one HEI have been studied in the context of a particular phenomenon (namely the use of e-learning) using multiple sources of evidence.

Case studies can be placed in three distinct categories, namely the intrinsic, where a researcher examines the case for its own sake; the instrumental case study which purposefully selects a small group of participants to explore a sequence of events or pattern of behaviour; and a collective case study which collates data from multiple sources (Stake 1995; Yin, 1984, 2009; Zainal 2007, Thomas 2010). The reported study was what Stake (1995) and Thomas (2010) consider an intrinsic case study, as it focused on providing a better understanding of the specific case in its own context, as opposed to using the case study as an instrument to facilitate greater understanding of an external situation more generalisable to a wider population as favoured by Yin (2009, 2013). Although being an intrinsic and exploratory case study, the research also aimed to provide explanations of findings through interpretation, and allowed the relating of one finding to another and so offered 'explanations based on the interrelationships between findings (Thomas, 2010, p.101). Any explanations however, remain limited to the case context and not generalisable.

By using quantitative and qualitative components in the case study design, both process and outcomes have been explored (Tellis, 1997) regarding e-learning within health care education in its own context and complexity. This would not have been possible had a single methodological approach such as experimental or survey research, or indeed a single qualitative method such as a purely phenomenological study been adopted (Zainal 2007).

Following the literature review and initial observations by the researcher, two areas of interest on which to focus the case study were identified as suggested by Stake (1995), these were:

1. Healthcare educator views of the appropriateness and application of e-learning to professional, undergraduate healthcare education.

2. Healthcare learner and educator motivations and experiences when engaging in e-learning.

The context of the study was undergraduate professional healthcare preparation. An HEI was used as a single 'case' of an organisation employing e-learning within undergraduate healthcare programmes leading to professional registration. In order to achieve the triangulation of findings advocated by case study researchers (Reese, 2011; Ridder, 2012; Thomas, 2011; Yin, 1999, 2003, 2013), the research design included studying four separate university departments, with a focus on students and educators within each department. The four departments were chosen as each corresponded with the inclusion criteria of employing e-learning within undergraduate healthcare programmes, whilst each also delivering healthcare preparation for differing professional groups. Data collection was carried out over two academic years, with a questionnaire piloted and delivered in 2010/11, informing the later phase 2 and phase 3 data collection periods during 2011/12.

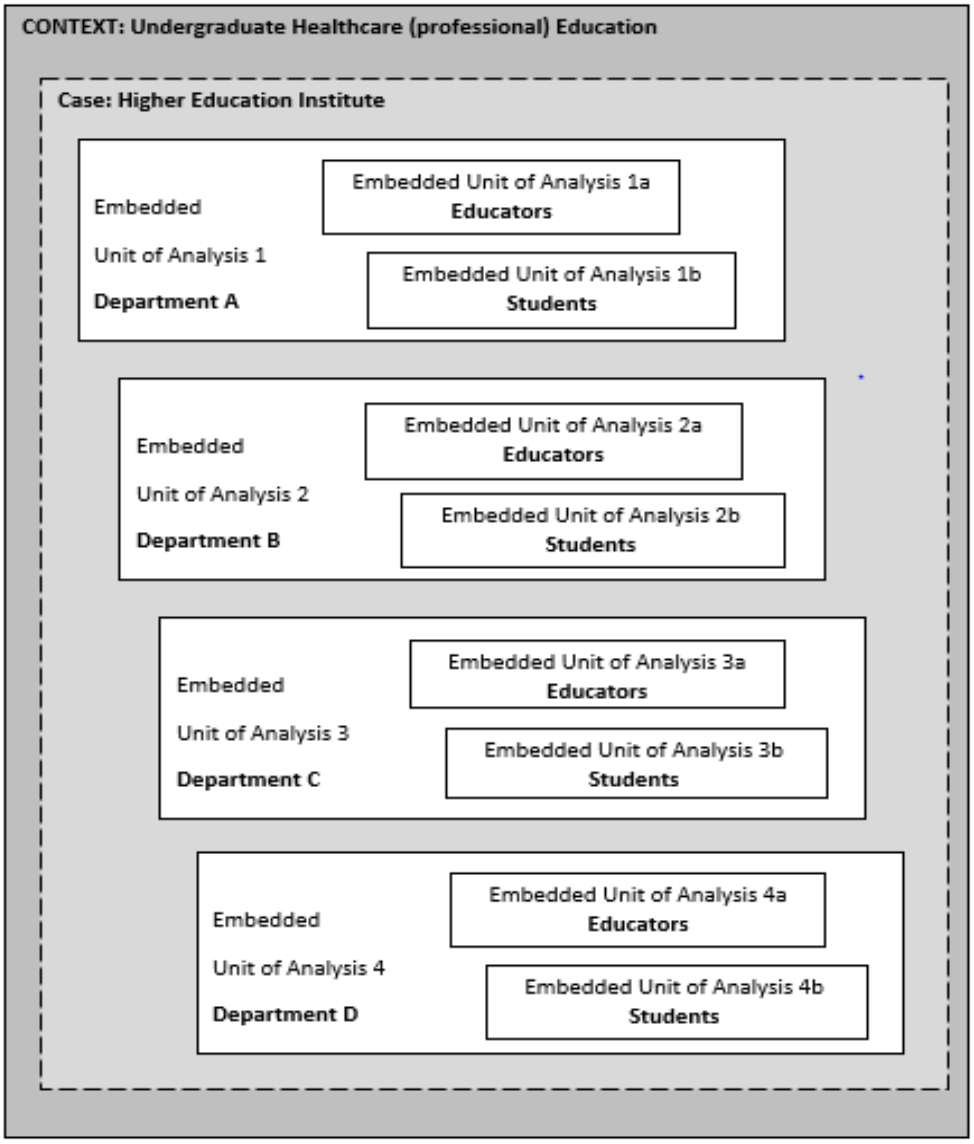
3.3.1: Case boundaries

Any case requires clearly defined boundaries to aid structure, data collection and analysis. To maximise research opportunities, yet take account of research achievability, the following boundaries were observed:

- A focus on the consenting department staff and students willing to participate.
- Purposeful selection of the largest undergraduate healthcare programme in each department as identified by the Head of Department.
- A focus on student and educator experiences.
- Data collection would be time bounded over two academic years to maximise data collection opportunities.

Figure 6 is adapted from the work of Yin (2003, 2009, 2013) and gives a diagrammatical representation of a single case study design. The current study is considered a single case study due to having the one context of undergraduate healthcare practitioner preparation, and focusing on one higher education institution's engagement with TEL (the Case). There are then four main embedded elements of analysis in the form of four educational departments in order to facilitate replication

of data set collation and triangulation through cross-comparison. Each of the departmental units of analysis also had key sub-embedded units of staff and students in order to maintain focus on the research questions of how and why educators and students engaged in e-learning:



Adapted from Yin's model (2014, p.50)

Figure 6: Case context and units of analysis

Figure 6 outlines the structure of context, case and embedded elements

3.3.2: Data corpus

For each department, the following data sets were collected to allow for a rich data pool and triangulation of findings from several different sources. Since department B was larger than the three other departments and situated over more than one campus,

three student focus groups were used to account for the department's larger size in comparison to department A. C, and D. A full breakdown of department and respondent demographic data can be seen in Chapter 4, Table 5.

Table 2: Case study data corpus by department

Data Set	Dept. A	Dept. B	Dept. C	Dept. D
Educator Questionnaire	n=5 (63%)	n=10 (43%)	n=7 (62%)	n=12 (41%)
Student Questionnaire	n=11 (58%)	n=54 (18%)	n=21 (55%)	n=41 (37%)
Qualitative Semi-Structured 1nterviews				
Head of Department	n=1	n=1	n=1	n=1
Programme Leader	n=1	n=1	n=1	n=1
E-learning Champion		n=2		
E-learning Detractor	n=1	n=1	n=1	n=1
Student Focus Group	n=1	n=3	n=1	n=1
Module Reviews	n=3	n=3	n=3	n=3
Context				
University E-learning support roles	One information technology support officer and one additional E-learning Coordinator interviewed			
Guidance documentation	Module space authoring guides Corporate T +L strategy document Staff education packages			
Undergraduate programme documentation: • Programme Specification • Module Descriptors • Programme Management Team meeting minutes	 n=1 n=3 n=2	 n=1 n=3 n=2	 n=1 n=3 unavailable	 n=1 n=3 n=1
Teaching & Learning Strategy	n=1	n=1	n=1	n=1

3.3.3: Selection of units of analysis

Given the constructivist epistemological stance and interpretivist theoretical perspective underpinning this study, departments selected as embedded elements for study were not chosen with the intention of defending their 'representativeness' or 'typicality' (Tellis, 1997). Rather it was on the basis of maximising what can be learnt from the case (Stake, 2005; Thomas, 2011). To that end, the author's previous knowledge of the case HEI, along with information on known high or conspicuously low usage from the university's information technology department, facilitated

identification of four departments delivering appropriate healthcare related programmes. Three of the departments delivered programmes directly leading to professional registration with a national body, whilst the remaining department delivered a healthcare related programme which led to a first degree qualification which acted as a pre-requisite for a course leading to professional registration. Therefore the principle criterion for selection of departments to study was less which departments were most representative of the HEI and possible wider HE sector and more which departments would best help understand the experiences of e-learning in undergraduate healthcare education in the context of this case university. Additionally, one department was identified as an atypical example of an issue of relevance to the research questions, as suggested by Thomas (2011), namely the predominantly non-clinical backgrounds of the teaching staff in comparison to the other departments. Accessibility to participants and data were also essential selection criteria (Stake, 1995), as was the author being connected with one case area (Thomas, 2011; Yin, 2013).

3.4: Ethical considerations

Due to the holistic nature of case study design which often includes concurrent collection of multiple sources of data, full ethical clearance for the study was obtained from the university ethics committee. When providing approval, ethical committees focus on the general principles of respect for autonomy, beneficence/non-maleficence, and justice (O'Leary, 2004; Parahoo, 1997; Pope & Vasquez, 2010) and it is under these topics that the ethical considerations for the study will be outlined.

Autonomy can be defined as the right to privacy, self-determination, personal liberty and natural justice (British Psychological Society (BPS), 2010; Long and Johnson, 2007). Permission from all heads of department, to include the department, its educators, students, and related online and hard copy documentary data in the study, was confirmed (Appendix A). A full explanation of the study aims, objectives, design and ultimate publication goals were given. Permission for access to data and participants by a major gatekeeper (Gray, 2009; Thomas, 2011) was granted at senior departmental level. The author attended a departmental meeting, providing a presentation and full written explanatory materials and consent forms to ensure each

staff member had the right to informed consent to participate, as opposed to an assumed inclusion and the right to opt out (Appendices B to E). The information sheet and presentation clarified the nature of the study and each participant's involvement, along with an explanation of the multiple forms of data the author would be collecting, such as copies of programme and module descriptors, reviews of relevant module web pages, and the views of students.

Access to potential interviewees was primarily achieved through initial identification of potential educator participants by the department Heads, and from suggestions from other interviewees using a snowballing data collection method. Potential educator participants and students were not approached directly, but given the opportunity to volunteer for interview or focus group following completion of the initial questionnaire, and via all-staff and all cohort information emails and information posters. Copies of questionnaires were also available as an on-line document and paper copies were left with the department administrators. This method ensured students and staff did not feel pressured into participating by a direct request from the researcher. Interviews with the resulting volunteers targeted educators previously identified as potentially giving the greatest insight such as those who were identified by colleagues as either e-learning champions or dissenters. The aim was to gain a consistently broad range of views from all four departments. Contact details for the author were included on the information to ensure any questions could be answered prior to starting data collection. A consent form was signed each time participants were surveyed or interviewed, which reminded participants of the range of collected data.

The principle of beneficence in research is to provide benefit to the participants, and non-maleficence is to do no harm (Hewitt, 2007), and a researcher is ethically obliged to achieve these goals. Participant benefits can be derived at both a personal and an organisational level. By completing the quantitative questionnaire and/or participating in either a semi-structured interview or focus group, participants were encouraged to consider their own learning styles, strengths, and preferences (Abdelaziz et al., 2011; Bassey, 1999). This activity was likely to promote greater student self-awareness of their learning needs and encourage educators to consider the effectiveness of their online teaching activity; whilst student participants experiencing and observing ethically conducted research gained reinforcement of theory learnt in the classroom

(Chen, 2011; Ishiyama, 2002). At an organisational level, knowledge derived from participants may well strengthen future programme delivery and e-pedagogy, thus possibly benefiting not only themselves, but also future learners and educators.

An important aspect of both autonomy and non-maleficence is the right of anonymity by having individual identities hidden within any final report or publication, (Johnson, 2014, Gerring 2007). To ensure anonymity, each of the four participating departments were given a label of A, B, C, or D which participants were coded to. Care was also taken to ensure no individual, whether educator or student, was named or referred to by an identifying title. All information identifying a specific undergraduate programme or module contained within reviewed documents, websites or reports, which might lead to identification of the original department, author, or participant, was removed from transcripts and all quotations used within the final thesis.

Although the interviews were not expected to stray into emotive or sensitive areas, the opportunity to debrief each respondent was provided to support participants should such an issue arise. Additionally, the author ensured that each interview ended with the opportunity for participants to consider positive aspects of their engagement in e-learning, which often related to an issue they were proud of such as an educator explaining a webpage contribution, or a student relating positive feedback received for an exercise completed.

3.4.1: Study conduct and rigour

The quality of a case study depends less on factors such as sampling, control of variables, or statistical significance of results as applied in quantitative studies intent on producing generalisable findings applicable to a wider population, and more on the robustness of the conception, construction and conduct of the study (Thomas, 2011). Study conduct and rigour is therefore less reliant on sampling cases appropriately, and more focused on choosing cases wisely. Conduct and rigour are ensured through the thoroughness with which a researcher describes the context and phenomena within the case and how well the method of analysis and subsequent discussion and argument sits within an explicit philosophical perspective (Exworthy, 2012; Gibbert et al., 2008; Thomas, 2011). According to some case study researchers however, all case study

design must ensure quality by attention to four key issues, namely construct validity, internal and external validity and reliability (Gibbert et al., 2008; Gray, 2009; Yin, 1999, 2009). Each of these aspects will be considered separately in relation to case study methods and the current study; however it is noted by this author that case study researchers such as Yin (2013) who advocate the use of originally positivist terms such as validity and reliability, do so from a qualitative and interpretivist perspective. Thomas (2011) and Stake (1995) reject these terms, stating they have no place in a single case study which is not attempting to show generalisable results, and prefer to discuss study conduct and rigour in terms of conception, construction and conduct of the study, identified through quality indicators such as:

- The clarity of questions asked
- Clarity and consistency of terms and definitions used
- Clarity of rationale provided
- Sufficiency of information
- Use of triangulation in data collection
- Explicitness in the formulation of the main claims. (Thomas, 2011)

To reconcile these two views, the author considered the current study applicability to the criteria advocated by writers such as Yin (2013), and further reflected on the issues of study conduct and rigour against the views of writers such as Thomas (2011).

3.4.2: Construct validity

According to Colliver, Conlee and Verhulst (2012), the consideration of construct validity is a means of addressing the validity of psychological concepts that have no concrete referent in reality, such as self-esteem or bad attitude, and involves interpretation and argument. According to Yin (2009, 2013) construct validity can be defined in relation to case studies as explicitly identifying correct and appropriate operational measures for the concepts being studied. For Robson (2011) and Whittlemore, Chase and Mandle (2001), ensuring a study measures what it intended to measure is also essential in achieving construct validity and was facilitated within the current study in a number of ways. Firstly, each data collection tool was designed to remain clearly focused on collecting data directly relevant to the educator and student participants and to the overall research questions. This approach included designing two quantitative questionnaires, focused on either educators or students,

with question areas relating to key issues noted from the literature review such as benefits, challenges and attitudes. Secondly, construct validity was maintained in developing a critical review tool for module web spaces that standardised the assessment of issues previously confirmed as valid in the literature and applied to relevant undergraduate modules identified by the participants themselves. The semi-structured interview and focus groups were guided by protocols which allowed the participants freedom to take the discussion where they wished, but also ensured the key research questions were covered. A pilot study was then undertaken for each element of the data collection and analysis process.

3.4.3: Pilot study

To many positivist researchers in healthcare, a pilot study is often associated with testing the feasibility and safety of a clinical trial or randomised controlled study (Robson, 2011; Thabane, Ma, & Goldsmith et al., 2010). For qualitative and case study researchers, the purpose of a pilot study are similar, and focus on the pre-testing of the research design processes and data collection tools (Ridder, 2012). The pilot work for this study aimed to clarify any ambiguities within questions, or participant instructions during the questionnaire phase, whilst also checking for omissions to the data. Piloting the semi-structured interviews and focus group protocols also allowed the author to rehearse and refine interview processes and technique and confirm timings. In keeping with the advice of many researchers, undertaking preliminary analysis of the pilot data also allowed the author to explore differing analysis formats and data presentations (Simons, 2009; Travers, 2001; Woodside & Wilson, 2003; Yin, 2013).

The questionnaire tool, interview protocols and data collection and analysis processes were piloted using the process advocated by Gillham (2000), whereby each topic area and question is critiqued for relevance and necessity. Each questionnaire was reviewed for clarity and face validity by three educator peers and three undergraduate nursing students outside the case study participant population, and several minor improvements made to various sections.

The draft questionnaire was then piloted by eleven student volunteers who were engaged in an undergraduate healthcare related programme not included in the study. This allowed for testing of the tool on a pilot group with as similar characteristics as possible to the main target group. Following feedback from both the participating educators and students in the pilot phase, further questionnaire tool amendments were made included the clarification of wording to the positive and negative statements within the attitudinal question. Additionally, a simplifying change from the use of a Likert scale to a yes or no response was made to educator questionnaire Question 8A regarding educator perceptions of potential student benefits from e-learning. The amendments were as a result of feedback from educators on the pilot question regarding feeling unable to estimate the degree of benefits to students, but feeling able to comment on the presence or not of such benefits. The final questionnaire tool was then reviewed by PhD supervisors.

A similar process was carried out with the qualitative data collection methods to pre-assess the educator semi-structured interviews and student focus group protocols for validity and practicality. The aim was to explore if a semi-structured and flexible questioning approach or the adoption of a more interactive discursive style of probing proved more beneficial to data collection (Kvale & Brinkman, 2009). Three interviews and two pilot focus groups were carried out, again using similar educators and students not included in the main study. The interview protocol appeared effective in generating valid responses and it became apparent that educators needed little prompting in directing their own narrative, whilst the student focus groups required more frequent prompting. The author decided to continue with the aim of allowing the participants to direct as much of the narrative as they saw fit, and use the interview protocol topics as a guide to ensure all key areas relevant to the main research questions were covered. This decision inevitably meant that the timing of the interviews and focus groups proved difficult to predict, but these were estimated to last approximately one hour.

The recordings were then transcribed and analysed using the same process intended for the main study to ensure the data received covered the topic areas aimed for. Additionally, pilot participants were asked to comment on the overall data collection strategy and data corpus. Although the strategy and expected data corpus were considered sound, a key feedback issue related to the author's original intention to

consider student assessment results for those modules identified by participants as blended or e-learning in nature; however, this was considered by the pilot group as overly intrusive and therefore removed from the data collection and analysis strategy.

All pilot data collected through interview and focus groups were digitally recorded to test efficacy of equipment, which also allowed the author to personally transcribe data and become familiar with the NVivo software. To facilitate this, two file repositories were built, after the technique suggested by Thomas (2011), whereby the 'raw' data was stored separately in its untouched entirety, and a second copy stored as 'working data' which the researcher considered and analysed. Undertaking the pilot phase proved highly beneficial in developing clear and robust data collection tools, and improving the equipment familiarity and interview technique of the researcher. Finally, on advice from the student participants, both an online and paper version of the questionnaire were offered to participants.

Interestingly, Thomas (2011) disagreed with Yin's focus on operational measures and use of pilot studies and rejected validity measurement within a single case study in favour of quality assessment based on clarity of writing, processes and choices made. The research design also met Thomas's (2011) criteria for quality in a case study by having clearly defined and consistently used terms, which led to clearly articulated research questions. A robust chain of evidence for decisions made during thematic analysis (after Braun & Clarke, 2006) was explicitly logged (on accompanying CD). Additionally, all participants were offered the opportunity to review transcripts of focus groups and semi-structured interviews in order to ensure the transcripts were accurate and representative of the meanings the informants were trying to convey. Only three participants of the sixteen semi-structured interviews asked to review their transcripts however, (suggesting a high trust in the author's integrity) and all three who responded to the offer agreed the transcript was an accurate account of the thoughts they had wanted to convey.

3.4.4: Internal validity

For positivist researchers, internal validity refers to cause and effect in an experiment or study, and how confident the researcher is that what was performed, resulted in the findings reported. (Johnson & Christensen, 2014). Yin (2003, 2009) asserted that

internal validity was only relevant to case studies where the researcher was attempting to confirm a causal relationship between X and Y, and therefore inappropriate to descriptive or exploratory case studies such as the current research. That stated, O'Leary (2004) advocated that internal or 'content' validity applied to any research situation in that quantitative questions are required to demonstrate comprehensive coverage of the domain under scrutiny, and any qualitative questions asked are required to maintain the authenticity, trustworthiness and credibility of the research. Within the case study design, an initial quantitative questionnaire was developed in order to explore participant understanding of terms such as e-learning and blended learning, and provide contextualisation of a range of issues identified by the literature review. The questionnaire therefore covered areas such as understanding of key terms, approaches to e-teaching and learning, benefits and challenges experienced during engagement in e-learning, and overall attitudes to e-learning. The data derived from the questionnaire can therefore be seen to closely match the topic under study and research questions, whilst providing a useful starting point for the qualitative data collection.

Although not a supporter of a positivist view of internal validity within exploratory case study designs, Yin (2009) does identify the need for acknowledging and assessing investigator inferences made from events that cannot be directly inferred, and suggests control questions of all inferences such as: Are the inferences correct? Have all rival possibilities been considered? And is the evidence convergent and sound? (Yin, 2003). To aid this internal questioning, the author adopted a reflexive stance, and continually reflected on the possible influence of the author's presence and personally held views on the research process and interpretation of findings.

Thomas (2011), would argue that O'Leary's (2004) concept of trustworthiness is another inappropriate representation of generalisability in relation to case study, and would categorise the current study as a local knowledge study, in that the original impetus to study the topic came from an environment and context with which the author is intimately familiar. Thomas (2011) considers this situation a 'readymade strength' (Thomas, 2011, p.76) as it allows the researcher access to a richness of data and analysis unavailable to a complete stranger to the situation. That noted, it became apparent from pilot study interviews with educators that regardless of role, some

educators displayed concern relating to being found lacking in knowledge about e-learning; for example apologising or expressing discomfort at not being able to define e-learning or blended learning. To minimise this challenge to participant comfort, and therefore the interview data, the author adopted a very informal approach to questioning, explaining all was confidential, and avoided questions likely to be perceived as a direct check on the participant's knowledge level. Additionally, to reduce any effect the senior academic role the author held within the case university upon either staff or students, a stance of 'fellow academic and researcher' was adopted with the educators, and one of 'fellow student' adopted as much as possible when facilitating the student focus groups. Furthermore, the majority of qualitative data collection was carried out whilst the author was on extended project leave away from managerial responsibilities within the institution.

3.4.5: External validity

External validity allows for generalisation from the data to be applied to other cases or situations (Gray 2009; Yin, 2013). In keeping with the views of Thomas (2011), and having clarified that none of the assertions made within a case study of this design are context free or derived within a positivist paradigm and will not be considered generalisable, any analogy to samples and populations would be erroneous. Therefore, the validity of any analysis and extrapolation of findings beyond the case itself does not depend on the typicality or representativeness of the case or cases, but on what Tight (2009) refers to as 'the cogency of the theoretical reasoning' (p. 334). In keeping with the author's theoretical perspective, any assertions from this study will at best be suggestive, and not considered even an idiopathic 'naturalistic generalisation' as discussed by Lincoln and Guba (1985), for as they write 'if there is a true generalisation, it is that there can be no generalisation' (p. 124).

Interestingly, although considering internal validity as inappropriate within case study methods, Yin has incrementally developed his ideas of 'theoretical generalisation' over the five editions of his influential *Case study research: Design and methods* textbook. Within the 2013 fifth edition, Yin distinguished between what he termed analytical generalisations from statistical generalisations. For Yin (2013) analytical generalisations provided 'the opportunity to shed empirical light about theoretical

concepts or principles' (p. 40) and not to assert inferences about a wider population based on data collected from a sample of that population. Yin advocated this as an appropriate position and claim when the stringent requirements for multiple case or multiple embedded element repetition was available to the researcher. These requirements included the ability for the researcher to identify, isolate, and remove differing variables by finding suitable alternative cases. Achieving this, according to Yin, should allow an identified analytical generalisation, noted through practical repetition of findings in three to four similar cases, to be theoretically removed due to the nonexistence of the appropriate variable(s) from other similar cases. This, however, would need to occur in an environment where:

> *'the boundary between case and context is unclear, and the case study researcher has little or no control over the issue under study'*
>
> (Yin, 2013, p. 40).

Due to the author considering Yin's current assertions on generalisability to be incongruent with his statement above and to go beyond the methodological limits of case study research within the chosen area, this study made no such claims of generalisation.

3.4.6: Reliability

In quantitative studies, reliability refers to the consistency of observations, and whether multiple observers on differing occasions, studying the same behaviour, gain the same data (Sapsford, Jupp, & Open, 2006). Reliability can be viewed within a qualitative paradigm and in relation to case study methods as the stability or trustworthiness of the findings (Gomm, et al., 2000; Ridder, 2012; Whittlemore et al., 2001; Yin, 2009). It could be argued that instrumentalist case study researchers are more interested in the phenomena displayed and their relationship to external considerations, than they are the uniqueness of the case (Thomas, 2011). Yin (2009, 2013) however, advocated three main strategies for maintaining validity and reliability within a multiple case study. Firstly, the use of multiple sources of evidence to allow for differing points of triangulation of apparent themes, facts and repetition. Secondly, the development and meticulous maintenance of a case study data base in order to effectively store, retrieve, and compare the various forms of data. Thirdly the

maintenance of a ‘chain of evidence’ which allows clear sight of the logical thread from the research questions, through presentation of evidence supported from the database and through to any conclusions drawn from the analysis.

Although not aiming to prove reliability from a positivist perspective of generalisability, the current study ensured the quality of study conduct and rigour through similar processes to those described by Yin through use of a coding audit trail (available on the accompanying CD) and seeking triangulation of findings across the four case departments. The single case study design met Thomas’s quality indicators (Thomas, 2011) as it allowed for methodological triangulation of findings through comparison of data sets from the differing students and educators across the embedded elements of the four departments. Triangulation was therefore continually sought through the research design, whereby issues explored in the quantitative questionnaire, such as reported frequency and use of discussion boards, were explored again during the module web space reviews. If the same point was highlighted during the module reviews, the issue was then revisited during semi-structured interviews and focus group sessions to give multiple data perspectives on the same issue (Gray, 2009; Thomas, 2011; Travers, 2001).

By using a standardised data collection protocol for each data set during the data collection phase, and by the author personally undertaking all semi-structured interview and focus groups, maintenance of consistency of questioning and the chain of evidence was achieved. Additionally, to aid conduct rigour and verification of transcription, coding, and thematic analysis, an established qualitative data analysis software package (NVivo 10) was used to store and structure all data, (accessed on the accompanying CD). The NVivo software supported the author’s data analysis by aiding explicit organisation of transcripts by source, whilst providing the ability to clearly link codes to relevant sections of the data. This offered the ability for the author to demonstrate to PhD supervisors a clear audit trail during data collection and analysis, as called for by Yin (2009) and Thomas (2011) and others.

3.4.7: Research governance

The study topic and research design method were considered as low risk in relation to causing participant harm or upset during the ethical approval process, however all access to departmental data, educators and students was negotiated via relevant heads of department initially and confirmed at departmental meetings. Further private follow-up meetings with staff were offered to address any concerns and enable each staff member included in the data collection process the opportunity to opt out confidentially. Two colleagues from one department opted out, and all modules e-authored by those individuals were excluded from the data collection process.

In keeping with other ethical research governance standards and Section VI of the Data Protection Act (1998), all electronic data were stored on password protected files on an institutional computer, as per university guidance requirements.

3.5. Specific research design

Having examined the principal underpinning method and approach to data collection, this section aims to make explicit the specific research design choices made before the data collection process. It will outline the various data collection tools used to obtain the data corpus and answer the research questions. Limitations and strategies to overcome issues encountered during the data collection process will also be discussed.

3.5.1: Module web spaces reviews

The predominant undergraduate healthcare related programme was identified by discussion with department heads and programme leads in each department. For each identified programme a module was selected from each of the three programme years for deeper consideration and analysis. This approach maximised the time and resources open to the author when data collecting fairly and consistently across all embedded elements. Modules were selected through discussion with educators and students, or due to being identified to the author during other data collection processes. All modules contained a dedicated web space provided through the university's Moodle based virtual learning environment (VLE).

To ensure consistency of approach when reviewing the module web spaces, criteria were developed using the research questions as a conceptual framework as advocated

by Stake (2005). The specific criteria also focused on issues identified from the literature review such as pedagogical approaches, use of communication tools, the presence of dedicated information technology learning outcomes, and linkage to overall module assessment (Abdelaziz et al., 2011; Cheng, 2013; Farrell, 2006; Knowles, 1980; Moule, 2007; Salmon, 2003; Schmidt & Brown, 2005). The criteria and review template can be seen in Tables 3 and 4, page 78 and 80 respectively.

The role of differing forms of information technology use was considered, with evidence of student and/or educator led learning also being a key area of interest (Bigatel et al., 2012; Brittan-Powell et al., 2008; Clayton et al., 2009). Each module was assessed against conceptual models of e-learning. Salmon's five stage model of e-facilitation (Figure 2) was used to gauge the level of educator facilitation and student interaction (Salmon, 2003); whilst Moule's e-learning ladder (Figure 3) was used to consider the underlying pedagogy and level of communication motive as opposed to information management motive (Moule, 2006, 2011). In addition, Palloff and Pratt's Effective Online Community criteria (Palloff & Pratt, 1999) were used to explore how effective the module web space was in facilitating a community of learning if attempted by the educators.

In order to achieve the module web space review, additional data was required from documentary evidence found in the previous year's annual module monitoring report for consideration of any entries pertinent to e-learning, along with relevant programme specification document(s) and relevant programme management team meeting minutes. Department specific guidance on e-learning publication or delivery was also examined. Any such entries were then transcribed verbatim by the author and imported into the NVivo 10 software package for coding. Although a key function of the document searches was to corroborate the module web space review evidence from other sources, inexperienced case study researchers have been criticised for inadvertently being misled when making inferences about events from such documents (Hamel, Dufour, & Fortin, 1993; Ridder, 2012; Tight, 2009; Yin, 2013). Therefore the author again maintained the reflexive stance required of 'the vicarious observer' (Tellis 1997) to avoid the risk of unsubstantiated interpretation of document entries.

3.5.2: Educator interviews

The interview is probably one of the most widely used methods of data collection in research (Bryman, 2004). Interview structure can vary from employing highly structured, 'closed' questioning, through to unstructured 'open' recording of narratives. Using a more open interview technique, the one-to-one interviews offered the case study author the opportunity to collect contextually valid and rich data in a flexible manner which facilitated follow-up of interesting statements and deeper consideration of underlying motives, (Exworthy, 2012; King and Horrocks, 2010; Robson, 2011 and others). Stake (1995) asserts that observation is preferable to interview and argues against the routine use of recording and post transcription when interviewing, considering the required repeated re-listening to glean meaning not apparent on first hearing to be too time consuming and resource expensive to justify. Rather Stake (1995) advocated careful listening with protected time immediately after an interview to write up the notes and reconstruct the account, with submission back to the respondent for confirmation of accuracy and 'stylistic improvement'. Although the time implications of recording and transcribing of interviews was not lost on this author, the practicalities of direct observation and time requirements of always being in a position to immediately document an interview resulted in the author rejecting Stake's assertion in favour of audio recording and later transcription.

For constructivists, qualitative interviewing is seen as involving the construction or reconstruction of knowledge and understanding, more than the mechanistic excavation of data (Braun & Clarke, 2006; Kvale & Steinar, 2009; Mason, 2002). It was therefore essential that the author maintained a reflexive stance throughout, remaining cognisant of the differences between his own views and those of the participants (Mason, 2002), and on any effect his presence may have on the participants and their narrative (Brewer 2000; Bryman 2004; Thomas 2011). It was also important to remain aware that the narratives were dependent upon the participants' abilities to verbalise, conceptualise, and remember events and issues they were relating (King & Horrocks, 2010). This caution further validates the case study method of comparing and triangulating data from multiple sources to help reduce such risks to data quality. The aim of triangulating or questioning interesting responses from the original questionnaire also guided the interview and focus group protocol, which further aimed to highlight the

descriptions and interpretations of respondents with the in-depth interviews being seen as a main route to multiple realities (Denzin and Lincoln, 2003; Stake 1995).

All interviews were voluntary and carried out at a time and place convenient to the participant, which often involved meeting the participant in a quiet room away from their normal place of work. The author used standard interview techniques such as the use of initial conversation to place the participant at ease (King & Horrocks, 2010), and remind them of the ethical principles and safeguards underpinning their involvement. Following a broad opening enquiry as to what they personally meant when using terms like e-learning and 'blended learning', follow on questioning and careful prompts ensured the subject's schedule dictated the interview (Tellis 1997). The author was guided by a broad interview protocol (Appendix F) which consisted of issues of interest, rather than actual questions. This ensured the interviewer did not dictate the agenda or miss emerging data, but allowed for guiding of further focus toward the overall research question areas once the participant had reached a natural break in their narrative (Galletta, 2013; King & Horrocks, 2010; Kvale & Brinkmann, 2009). Prior to and after the interview process, field notes were recorded in an ongoing journal, covering aspects such as participant attitude and mood. Any useful comments made by participants outside of the interview situation, or relevant events occurring within one of the subject departments which might have a bearing on the overall topic were also recorded. The field note journal was not however, used in the analysis of the interviews, but as a tool to provide context and background information for the author.

3.5.3: Student focus groups

Focus group interviews provide the vehicle for a group of people with specific attributes to provide qualitative data related to the research topic, via group discussions in a comfortable environment (Cheng, 2007). The Focus groups allowed for differing perspectives to be explored simultaneously (Parahoo, 1997), and helped to validate statements made during the educator interviews. When considering collection of qualitative data from students, the author reflected on the effect being a senior academic within the institution might have during one to one interviews with student participants. The concern was that any perceived imbalance of power might hinder the openness with which student participants responded. Additionally, the student

questionnaire pilot suggested a low uptake to the offer of an individual interview post-questionnaire. By using a focus group data collection method with students, the intention was to redress any perceived power imbalance, by the author adopting the approach of a facilitative moderator for a group. Students were considered relevant to the focus if they were engaged in the identified undergraduate programmes for over six months (one semester), with a balance of students from each of the three years of the programmes actively sought. Students were invited to participate in the focus groups by the author visiting the cohort immediately before a class. During the visit, students were thanked for (and reminded of) any completion of the questionnaire before being invited to take part in a focus group within the week over a lunch time period. Refreshments and sandwiches were offered to promote attendance and ensure informality, which appeared to work well. The same interview issue based protocol used with the educator interviews was used to facilitate the group discussion, with the author deliberately dressing casually and explaining their externality to the department and issues. Initially one focus group from each embedded department was conducted, with a further two focus groups being delivered in the larger department B, until the author was convinced that theoretical data saturation, defined by Bryman (2004) and others as when no new or interesting data appears to be emerging, was achieved.

3.6: Data analysis

Transcription allows for the richness of data obtained through an interview to be captured exactly as expressed by the participant, then repeatedly re-listened to, deconstructed and analysed at a convenient time by the researcher (King & Horrocks, 2010). Even the most diligently transcribed audio recording however, is not free of the transcribers' world view and philosophical stance, which may affect the way the spoken meanings are defined and shaped in the resulting text. The presentation of this text will then ultimately affect the final analysis of data (DiCicco-Bloom & Crabtree, 2006; Gubrium & Holstein, 2009; Kvale & Brinkmann, 2009). DiCicco-Bloom and Crabtree (2009) further argue that transcription and analysis are therefore the author's interpretation of the participants reported reality, and stress the value of not only accurately recording the participants' words, but all non-lexical utterances, (such as umm, err..etc.), all pauses (less than three seconds), silences (greater than three seconds), hesitations, laughter, and other emotions within the transcription; whilst

Gubrium and Holstein (2009) also advocate any emphasis placed on words by participants should be noted with italics.

This above approach to transcribing, although time consuming, allowed the author to capture all interviews and focus groups in their entirety, and in conjunction with the use of transcription software (NVivo 10) facilitated the presentation of accurate examples of narrative with an auditable evidence trail during later analysis and writing of findings. The transcription reproduced any duplication of words or overlapping speech, which proved a regular occurrence during the student focus groups and suggested the students felt sufficiently relaxed and engaged enough to talk over each other, and at times, the author. By repeatedly listening to the audio recordings whilst re-reading the related transcript, the author was able to fully immerse in the data and confirm the transcribed account and meaning matched the intended meaning of the participants. A further check on the validity of the transcripts was also achieved through offering the transcripts back to the participants for validation. Only 3 participants took this offer up, (hopefully suggesting a high trust in the author's integrity), replying they were content with the accuracy of the transcript.

In summary, the three phases of data collection were successful in providing detailed and rich coverage of each department within the case university. The next section outlines the underlying principles and approach taken to data analysis of each of the three data sets.

3.6.1: Analysis of educator and student questionnaires

The educator and student questionnaires served four main functions in keeping with the study aims. Firstly to clarify definitions of key terms held by recipients; secondly to contextualise the case university in relation to issues noted in the wider literature; and thirdly to explore participant attitudes and beliefs in regard to e-learning. Finally the results from the questionnaire highlighted areas of interest intrinsic to the case which informed the deeper qualitative phase. Analysis of the questionnaire was primarily descriptive, and used descriptive statistics to analyse the Likert scale responses. Where open ended questions were asked regarding definitions of e-learning and blended learning, the text based responses were categorised into one of three

groups, namely process, technical or pedagogically focused definitions and added to the NVivo software database for coded in the same way as the educator interviews and student focus groups. Care was taken during reporting and analysis to focus on description, and avoid what Gillham (2000) warns is a temptation of questionnaires presenting deceptively simple data which can be easily over interpreted.

As Jameison (2004) stated, the response categories of 'strongly agree' to 'strongly disagree' in a Likert scale may have a rank order, but the intervals between the categories should not be assumed to be equal. Statisticians warn against the error of treating such ordinal data as having equidistant intervals and considering the results as interval data suitable for parametric analysis (Bryman, 2004; Jamieson, 2004; Parahoo, 1997). However, researchers such as Joshi et al., (2015) and Carifio & Perla (2007) argue that if all scored items on a Likert scale are combined to give a composite score for an individual responder or group of responders (as opposed to analysis of single items by all individuals), then this individualistic summative score shows a sensible distance from the score of another individual or group, and may be considered interval estimates (Carifio & Perla, 2007; Joshi et al., 2015). Having considered these two opposing positions, the author ensured that during all descriptive analysis, caution was exercised to avoid treating non ordinal data such as ranked responses as ordinal numbers, but to use the arguments of Joshi et al (2015 and Carifo & Perla (2007) to allow summation of the overall attitude inventory scores for interest only and to aid description of any major difference noted between departments. Responses to each question were collated from the online and paper version of the questionnaires and presented using Microsoft Excel spreadsheets and bar charts (provided on the accompanying CD), indicating actual response numbers alongside any descriptive percentages stated.

3.6.2: Analysis of module web spaces

Each identified module web space was analysed using the criteria outlined in Table .3. In addition to noting the presence or absence of individual criteria, the author made notes on the degree to which such factors as discussion board use was evident. Furthermore, where module web spaces contained written guidance or information on

the use of the online resources, these transcripts were captured and imported into the NVivo 10 qualitative software analysis package and coded in the same way as the interview and focus group transcripts, thus contributing where appropriate to the developing categories and themes.

Table 3: Module web space review criteria

Review criteria	**Comment / Observation**
Overall Module Teaching Strategy / Structure	Consider whether: • Predominantly classroom based (F2F) • Blended Learning • Distance Learning.
Dedicated E-learning outcome within module descriptor?	Yes / No
E-learning contributes directly to summative assessment?	Yes / No
Overall e- Pedagogical approach	Consider whether: • Information Management • Instructivist / Constructivist • Promotion of online community of learning
Use of module discussion boards as specific teaching strategy	Yes / No / Usage level? Alternatives?
Level of interactivity: • Accessing databases / document Library & resources / • External website hyperlinks • Links to Social media sites • Use of CD ROM / Video • Writing to site WIKI / Blog • Uploading photo materials • Engage in online Quiz/ tests • Online learning exercise / Reflections • Use of mobile phone / tablet	 • Number of structured sessions • Number of sessions , and whether linked to an activity • Yes / No / usage • Yes / No / Usage level? • Yes / No / Usage level? • Yes / No / Usage level? • Yes / No / Usage level? • Yes / No / Usage level? • Yes / No / Usage level?
Evidence of Salmon's (2003) Five stage model of e-moderation by educators	Comment on level of e-moderation by educators within web space
Evidence of Moule's (2006) conceptual model of online learning: the e-learning ladder	Pedagogical approach taken.
Evidence of Palloff & Pratt's (1999) Effective Online Community	Online community of learning present or information management use
Student Controlled e- Learning	Level of control and how used / encouraged?
Educator controlled learning	Structuring? Locking of future sessions? Level of direction?

3.6.3: The questionnaire tool

The questionnaire served several purposes. It provided an opportunity to assess student and educator understanding of key terms such as e-learning and blended learning; whilst also describing information technology usage and views on the benefits and challenges of e-interaction. It placed the study subject in the context of the case university and focused the attention of the author on key issues within the case institution as indicated by the participants themselves, and supported semi-structured interview protocol and development of web page review criteria. A final purpose of the questionnaire was to give respondents the opportunity to volunteer for further follow up interviews or focus groups should they choose to do so.

The data produced were then used to focus qualitative data collection resources in order to maximise in-depth understanding. The educator and student questionnaires consisted of 10 questions containing a total of 77 stems (Appendices G and H), and were designed to allow for comparison of answers from student and educator versions of the same core tool. The online and paper versions of the questionnaires were exactly the same; however the numbering of the paper version was expanded for questions 1 and 2 in regard to demographic data and past experience, in order to visually present the same question on paper where the online version used a drop down selection menu. (See Table 4 for an overview of the question logic and Appendices G and H for the paper version of student and educator questionnaires).

Table 4: The questionnaire tool

Question	Aim / Focus	Stem	Links to Literature Review
Question 1	Collection of anonymised demographic data to aid analysis	Demographics (To aid data analysis only) (age, gender, ethnic origin)	JISC (2007) Tylee (2001)
Question 2	To establish previous IT qualifications and e-learning experience		
Question 3	Explore definition and understanding of the term 'e-learning'	What does the term e-learning mean to you? (free text response)	Ali (2007); JISC (2004); Hughes (2009)
Question 4	Explore definition and understanding of the term 'Blended Learning'	What does the term blended learning mean to you? (free text response)	
Question 5	Determine if a preference for communication or information management forms of e-learning exist in the case departments	Please read the following statements and select one option per row that most closely relates to the way you write (Educators) / use (Students) online learning materials (2 statements considered against a 5 point Likert scale)	Martinez et al (2007); Moule (2006); Palloff & Pratt (1999); Salmon (2000) Ali (2007)
Question 6	Identify if any reference for student led or educator led modes of e-engagement exist.	Please select the option that most closely relates to your preference when writing (Educators) / using (Students) e-learning materials. (2 statements considered against a 5 point Likert scale)	Alonso (2005); Browne (2005); Purdy (1997)
Question 7	Comparison of educator personal use of 13 aspects of information technology with any corresponding expectation for student use when e-learning.	How often, if at all, do you or your students engage in the following? part 1: You personally (outside of module teaching), Part 2: Your students as an expected part of module e-learning	Sit et al, (2005); Jonas & Burns, (2010); Nichol & Millighan, (2006); Stodel et al, (2006) and others

		requirement (Considered against a 5 point Likert scale)	
Question 8	Explore the level of educator and student agreement of experiencing potential benefits from e-learning (links to motivation)	Do you think e-learning provides benefit to you in any of the following ways? (15 potential benefits of e-learning considered against a 5 point Likert scale)	Sit et al (2005), Browne (2005);Jonas & Burns (2010), Nichol & Millighan (2006), Stodel et al. (2006)
Question 9	Explore the level of educator and student agreement of experiencing potential challenges to e-learning. (for comparison with literature.	Has e-Learning produced any challenges to your teaching experience such as? (12 potential challenges to e-learning engagement considered against a 5 point Likert scale)	Farrell (2006), RCN (2007), and Petit dit Dariel et al. (2013)
Question 10	Attitudinal Scale to explore educator and student attitude toward e-learning.	Please read the following statements and select one option per row that most closely relate to your level of agreement. (6 positive and 6 negative statements. Considered against a 4 point Likert scale	Jonas and Burns (2010), Henderson, Morris, & Fitz-Gibbon (1987)

Table 4: The questionnaire tool (Continued)

The target populations for the questionnaires were considered to be all third year students and all educators engaged within each case department's identified core undergraduate healthcare preparatory programme. Third year students were focused upon for the questionnaire as they were considered to be most likely to have knowledge and opinions on each question, plus it ensured that all students targeted were within the university rather than on placement during the data collection period, with equal opportunity to participate. As can be seen from Table 4, thirty nine from a potential seventy one educators from across the four departments (giving an overall response rate of 57.5%) and one hundred and twenty seven students from a potential four hundred and sixty five completed the questionnaire (producing an average response rate across departments of 42%, but an overall response rate of 24%). The initial student response rate for department B was disappointing at 14%. Resending letters and further emailing of the online questionnaire and attachment of a paper version of the questionnaire, increased participation to 18%. The number of responders was still felt sufficient for the study purpose however, particularly in light of the purposeful nature of respondent selection inherent in a case study. Quantitative researcher views on sufficient response rates differ, and range from 30% (Parahoo, 1997) to 80% for controlled representative trials (Bryman, 2004); however, Miles and Huberman (1994), Thomas (2011) and Stake (2005) advocate focusing less on response rates during case study design, and more on clarifying participant population choices.

The final question consisted of an attitudinal scale. Having found only previously developed attitude tools relating to use of computers or the internet, the author decided to develop a bespoke tool with the underlying principles of formulating unambiguous questions which produce meaningful data relevant to the case university. Time was spent to ensure both the presentation and layout of the questionnaire were clear, logical, and valid for both educators and students with the ability for data to be readily comparable, and presentable in both an online and paper based format before piloting. The development of the tool followed a process first advocated by Henderson, Morris, & Fitz-Gibbon (1987). The aim was to gauge if the respondent had a generally positive or negative attitude to e-learning overall. While attitudinal surveys take many forms and can potentially consider any issues, they typically consist of a series of statements that students are asked to express their agreement or disagreement through using a five point Likert type scale ranging from 'strongly agree' to 'strongly disagree' with a

'don't know' option often included (Parahoo, 1997). The Likert scale structure utilising the above four (plus one) categories is accepted as a valid instrument in measuring attitudes to a given topic (Joshi, Kale, Chandel, & Pal, 2015; Zhang, 2007) and allowed the author to focus on the development of the attitude statements. The four (plus don't know) category structure also had the benefit of requiring a respondent to decide on either a negative or positive statement as there is no neutral mid-point (Jamieson, 2004). The statements were developed by means of a small pilot exercise using two groups of second year undergraduate healthcare students who would not be involved in the questionnaire survey, along with a group of four postgraduate focused academic colleagues. The first group of 12 students were recruited from a cohort of 43 and asked to write as many statements (positive or negative) relating to e-learning that they felt applied either in their opinion, or what they felt to be the opinion of their peers. Volunteers were told that at this stage grammar and wording of the statements were not important. A similar exercise was undertaken by the educator group.

The student group produced 48 statements, of which 37 appeared negative, whilst the educators produced an initial 23 statements, of which 15 were predominantly positive in nature. Interestingly, the vast majority of statements matched themes identified by Jonas and Burns (2010), including, level of IT skills, perceptions of e-learning, independent learning abilities, motivation to study, study costs, and learning support. After removal or merging of statement considered to be a repeat of others, a total of 26 statements were left from both the educator and student efforts. These statements were found to be readily categorised as either pedagogically focused (commenting on learning outcomes or learning through collaboration or communication online), or process/instructional design focused (commenting on teaching processes or infrastructure requirements). These categories were noted for later consideration as possibly important in the context of the case university.

The remaining statements were then further examined by a second group of second year healthcare students (n=9) for further repetition and clarity. This reduced the number of statements down further to 19. Finally, the author and supervisors reviewed each statement in the context of the other nine questions within the questionnaire, and their ability to apply equally well to both students and educator respondents. This removed a further seven statements, and allowed for a balancing of 6 positive and 6

negative statements in the final attitudinal tool which was then piloted using the process previously outlined in section 3.4.3.

3.6.4: Analysis of transcripts

A semantic approach to data analysis of the interviews and focus group was taken, whereby themes were identified in relation to the explicitly coded meanings of participant statements. Instrumentalist case study researchers such as Bailey (1992), Tellis, (1997) and Yin (2009, 2013) advocate techniques such as pattern recognition within data to support direct interpretation of research findings, whilst Stake (1995) advocates categorical aggregation. That is not to say that such presentations of patterns or themes were presented in positivist and generalisable terms within the study. As noted earlier, for intrinsic case study researchers such as Stake, corroborating phenomena are not derived from pre-defined external variables, but from issues identified as the case study progresses. Ragin and Becker analyse in a similar way, continually asking what this is a case of? (Ragin & Becker, 2005).

In line with an essentialist/constructivist approach, the author went beyond description and summarisation during the case discussions to interpret the significance and broader meaning of the themes in relation to the case. A theme is considered an important, identifiable pattern within data which relates to the research questions, (Braun & Clarke 2006; Silverman 2006; Yin 2013). The importance of any pattern was not solely attributed on the number of incidences in which the 'theme' was evidenced across the data sets, but also allowed author judgement to highlight the importance of the theme to the research questions during the later discussion. When prevalence of evidence for a theme was considered, it was in relation to the number of times the codes supporting the theme were mentioned by differing respondents within each department, rather than the number of times respondents mentioned the theme within each interview or focus group. The importance of making this decision explicit was to ensure consistency of analysis across embedded elements and internal reliability as called for by Stake (1995) and Thomas (2011).

In keeping with the interpretivist thinking of Braun and Clarke (2006), the author remained cognisant of ensuring that developing themes were protected from preconceived ideas. The themes were a construct of the author, and explicitly recognised as such. It was then for the author to make a convincing argument for all interpretations and themes, clearly evidenced from the data. Braun and Clarke's thematic analysis process differs from methods such as grounded theory (Glaser and Strauss, 1967) in that, although using an inductive coding and analysis process, Braun and Clarke's process focused on shared pattern recognition across the data and so was in keeping with the epistemological stance of the author and case study method. Being underpinned by a relativist / constructivist epistemology, the case study does not purport to develop generalisable theory from the themes constructed. Rather, the thematic analysis was used as advocated by Braun and Clarke to 'reflect reality, or to unpick or unravel the surface of reality' (Braun & Clarke, 2006, p. 81). Throughout transcript analysis the personal meaning and context of the participant transcripts were maintained whilst weaving the differing experiences together through pattern recognition. Through a constant comparison process, and continual reflection on the participants' experiences, repetitive checks were made on all interpretations of the data to minimise any influence from the author's own beliefs or experiences.

Braun and Clarke's (2006) Six Phase Thematic Analysis process can be seen in Figure 7 and the details of each phase outlined below.

Phase one involved transcribing all educator interviews and focus group audio recordings, and repeatedly listening to and reading all transcripts in order to fully immerse in the data collected. Phase two of the process involved developing initial codes, of which 108 were identified. This process involved continually reading and re-reading the data sets as new codes were identified. The NVivo 10 package replaced the need to physically highlight coded sentences and then cut and collate them into groups on paper, with a more efficient electronic process of cutting and pasting an imported version of the transcript into files for each code. This had the benefit of keeping the original transcripts untouched should later review be necessary, but also allowed for more efficient identification and tracking of which respondent stated what, when, and in which context. Additionally, the software allowed for any single

statement within a code to be easily expanded outwards back into the main text should the author wish to confirm the context of the statement.

Figure 7: Braun V & Clarke V (2006) Six phases of thematic analysis

Phase		Description of the Process
1	Familiarizing yourself with your data:	Transcribing data, reading and re-reading the data, noting down initial ideas.
2	Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3	Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4	Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5	Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6	Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating the analysis back to the research question and literature, producing a scholarly report of the analysis

Adapted from Braun and Clarke (2006) p. 87)

Phase three began once all transcripts across the entire data set had been systematically coded and involved grouping codes into initial themes and checking all potential themes contained all relevant code data. During this phase several theme and sub-theme combinations were explored. This phase also involved developing differing thematic maps whereby the potential relationships between initial themes were evaluated, and either rejected, or developed into more substantial themes or sub-themes. Phase three resulted in the removal, merging or refining of codes from the original 108 codes to 65 codes, grouped into five initial themes of:

Theme 1: Information management rather than e-pedagogy
Theme 2: Professional training or academic award
Theme 3: Challenges to successful engagement
Theme 4: Justification (Previous title: student self -discipline over motivation)
Theme 5: Student & teacher relationship
At this stage some remaining initial codes did not fit comfortably into the above themes with other's fitting into hierarchical categories to be further analysed and reviewed in later phases, as tabled on the accompanying CD.

The fourth phase involved two levels of analysis whereby a themes' overall meanings were reviewed in light of the coded extracts being used as evidence to support them, followed by a further level of analysis whereby the developing themes were considered again for validity across the entire data set and restructured and reformed into sub-themes if a clearer relationship was identified or clarity of description aided. At this stage one initial theme was rejected due to a lack of substantiating evidence across all embedded elements, and another restructured within the thematic map as a sub-category.

Phase five continued with continually defining and refining the names of the developing themes in order to best explain the overall case. This resulted in the formation of the final three themes of:
Theme One: Information management versus e-pedagogy
Theme Two: Educational culture
Theme Three: Builders and blockers
Each theme contained between one and four sub-categories, with sub-categories containing between three and six codes as illustrated in figures 69 to 71 in chapter six and evidenced in the coding audit file on the accompanying CD.

Phase six was the writing of the holistic case report in relation to the original research questions within the discussion chapter.

3.7: Limitations to the study

The pilot work provided confidence that the research method would answer the intended research questions and produce useful and useable data. The low response rate to the data set one quantitative questionnaire for students from department. B at 18% although not ideal, was felt to be representative of the third year target population group in relation to their demographics such as age and gender. It is noted however, that non responder populations may have differing characteristics, such as attitude to the topic under study or less time to respond, than those who volunteer to participate (Bryman, 2004; Davies, 2007). That stated, the mixed views presented by respondents suggested avoidance of an overly enthusiastic or pessimistically biased motivation to complete either the quantitative questionnaire or semi structured interviews.

As with all semi-structured interviews and focus group data collection methods, the study author relied on the narrative competence of the participants to articulate their beliefs, attitudes and views (Petit dit Dariel, et al., 2010). Although measures were undertaken to reduce the effect the author may have had on respondent narratives, on reflection some narrative may equally have been influenced by emotional responses, or a possible educator desire to convey a perceived appropriate message, and similar student desire for either the author or their peers within the focus group.

The case study research philosophy and methodology do not claim representativeness to the point of generalisability to other HEI, as it provided a detailed look at one complex organisation. The mixed methodological basis and single case design, supported by the four departments functioning as multiple embedded elements (Reese, 2011; Ridder, 2012; Thomas, 2011; Yin, 1999, 2003, 2013) produced sound triangulation of key findings. The demographics of the respondents proved largely in keeping with the overall department populations for students and educators. Although the respondent views are likely to be concurrently shaped by and influenced the views of their wider departmental peers and colleagues, the study nevertheless naturally lent itself to particularisation rather than generalisation (Stake, 2005). Due to an insufficient number of departments delivering healthcare programmes within the university, the study could not be designed as a multiple case study as described by Yin (2009, 2013), Tellis (1997), and Thomas (2011). The single case study design did however allow for the multiple data sets from the embedded elements to be compared

and contrasted within the single HEI case (Figure 6), thus replicating some benefits for data analysis borne from repetition of findings across differing departments. Such repetition of findings may increase the overall study construct and internal validity whilst also improving reliability of any analysis and inferences drawn from the data (Reese, 2011; Simons, 2009; Yin, 2009).

As asserted by Yin (2013); (Stake, 1995), and (Thomas, 2011) by comparing and contrasting the respondent views with the wider literature, some similarities were found that further supported the trustworthiness of the findings. According to Petit (2013), such comparing and contrasting of study findings to supporting literature is one reason for increased popularity of the case study method with policy makers; however the study would need to be replicated in other contexts and within other HEI in order to ascertain its relevance to wider healthcare undergraduate education.

This chapter has given a detailed account of the methodology and specific research design used within the case study, including providing a detailed account of the data analysis design and process. The next chapter presents the study findings.

Chapter 4. Questionnaire Findings

This chapter reports the findings of the three data collection phases which built a detailed case study of the educator and student perspectives and experiences of e-learning in each department. The case study method and research design proved effective in providing sufficient quantitative and qualitative data to achieve data saturation and the construction of three themes. The case study benefit of exploring the same issue using differing approaches was successful in triangulating findings.

In chapter four, the educator and student questionnaire responses are jointly presented in relation to the questions to aid comparison of the two data items and reduce repetition of reporting. In chapter five, the structured review of relevant undergraduate module web spaces are discussed. Finally, a deeper analysis of each department is presented in chapter six using exemplar verbatim data from the educator semi-structured interviews, and student focus group sessions. The results for each department were considered collectively under the themes and codes identified to present a holistic picture of the case, whilst highlighting commonalities and differences in the data from individual departments.

Summary of data presentation

Chapter Four:	Data Set One: The educator and student quantitative questionnaire data (n=127 students and 34 educators)
Chapter Five:	Data Set Two**:** The review of twelve module web spaces identified by participants as of interest within each department.
Chapter Six:	Data Set Three: Sixteen semi-structured educator interviews and six student focus group findings from across the four departments.

Data Set One: Quantitative questionnaire responses.

The response rates for each department were presented in Table 4.1 which showed a combined response rate for educators across the four departments of 57.5% (n=39 from a potential 71) and 24.3% for students (n=127 from a potential 465). The questionnaire responses from all four departments will now be presented in the following sections.

4.1: Q1. Participant demographics

Demographic data were collected at the start of the questionnaires regarding age, gender, and ethnic background to compare participant demographic characteristics with the wider department. Educator and student respondent demographic data pertaining to all four departments under study are shown in Table 5.

Department size in terms of educators employed varied, with department A being the smallest and department D the largest. Educator participant gender was representational of the predominantly female educator workforce in all four departments. Ethnic origin and age also proved representational of the overall educator demographic in each department.

The mean age of students for departments A, B, and D was 21- 25 years of age, with department C proving slightly older with a mean age of 26 – 29 years, whilst department D had the highest proportion of 18 - 20 year old students at 37% (n=15). Student participant demographic data suggested all four departments recruited a predominantly UK white female student population during the data collection year, with department A having a 100% female population of students and department D containing the most male students at 29% (n=12). These figures corresponded well with overall student demographic figures for each department obtained through the central university informatics service.

Table 5: Respondent demographics

Department	**Q1 Educator Data**		**Q1 Student Data**	
Department A **Bold = Mean**	Number of educators in department = 8	Educator response rate = 62.5% (n-5)	Number of 3rd year students within relevant programme = 19	Student response rate = 58% (n-11)
Mean Age Bracket	Age Range = 41 - 56 years	**40.0% within mean of 41- 44 years (n=2),** with 49-48, 49-52, 53-56 years each (n=1)	Age Range =21- 32 years.	**45% within mean of 21-24 years (n= 5),** with 25-28 years (n=4) and 29-32 years (n=2).
Ethnic Origin	100% White UK (n=5)	All respondents answered	100% White UK (n=11)	All respondents answered
Sex	100% Female (n=5)	All respondents answered	100% Female (n=11)	All respondents answered
Department B **Bold = Mean**	Number of educators in department = 23	Questionnaire % response = 52% (n- 12)	Number of 3rd year students within relevant programme = 296	Questionnaire % response = 18 % (n- 54)
Mean Age Bracket	Age Range = 37 – 56 years	**42% within mean of 49 - 52 years (n = 5),** with 37 – 40 years (n=3) and 41 – 44 years, plus 53 – 56 years, both (n=2)	Age Range 21 - 48 years	**55% within mean of 21-24 years (n= 31**), with 25-28 years (n=12), 29-32 years (n=3), 33- 36 yrs. (n=1), 37-40 (n=2) and 41-44 (n=2).
Ethnic Origin	83 % White UK (n=10)	Mixed Race: n=1 Declined to say: n=1	100 % White UK (n=54)	All respondents answered
Sex	33.3 % Male (n=4) 66.7 % Female (n=8)	All respondents answered	9 % Male (n=5) 91 % Female (n=49)	All respondents answered

Department C **Bold = Mean**	Number of educators in department = 11	Questionnaire % response = 63.6 % (n=7)	Number of 3rd year students within relevant programme = 39	Questionnaire % response = 53% (n=21)
Mean Age Bracket	Age Range = 41 – 56 years	**28.6% (n = 2) evenly distributed through 41-44, 45-48, 49-54 years,** with 53 – 56 years (n=1)	Age Range 21-36 years	**52% within mean of 25-29 years (n= 11),** with 21-24 years (n=8), 29-32 years (n=1), and 33- 36 years (n=1).
Ethnic Origin	**100 % White UK (n=7)**	All respondents answered	**93 % White UK (n=19),** with 1 Indian respondent,	1 respondent declined to answer the question.
Sex	28.6 % Male (n=2) **71.4 % Female (n=5)**	All respondents answered	9.5 % Male (n=2) **90.5 % Female (n=19)**	All respondents answered
Department D **Bold = Mean**	Number of educators in department = 29	Questionnaire % response = 52% % (n-15)	Number of 3rd year students within relevant programme = 118	Questionnaire % response = 35% (n-41)
Mean Age Bracket	Age Range = 33 – 64 years	**40% within mean of 45 - 48 years (n-6),** with 33 – 36, and 37 – 40 years (n=2 each), plus 61 – 64 (n=1)	18 - 28 years	**58.55% within mean of 21 to 24 years (n= 24),** with 36.5% within 18-20 years (n=15), and 25-28 years (n=2).
Ethnic Origin	**80 % White UK (n=12)**	Decline to say: n=3	**97.5 % White UK** (n=40) with one Asian British respondent	All respondents answered
Sex	20 % Male (n=3) **80 % Female (n=12)**	All respondents answered	29 % Male (n=12) **71 % Female (n=29)**	All respondents answered

Table 5: Respondent demographics (Continued)

4.2: Qualifications and perceived confidence in use of e-learning

Table 6 presents Question 2 data on educator and student responses regarding I.T and e-learning qualifications and self-reported confidence in using e-learning.

Across all four departments, the majority of educators reported no formal information technology qualifications with just under a third (n=10) reporting completion of the European Computer Driving License. No educator respondent reported having any professionally recognised e-learning qualification or higher education award in e-education. However, 60 % (n=9) of department D respondents had completed the university in-house e-learning Module for staff (n=9). The majority of departments A, B and C educators reported previous experience of e-learning as being self-taught, with very few educators having completed the in-house e-learning module.

Student IT qualifications appeared more variable. The majority of departments B and C students reporting no formal information technology qualifications, yet some students had obtained a previous HE I.T award. Department D returning marginally more GCSE or equivalent level I.T qualifications at 51% (n=21) as opposed to no qualification, but no department D student had obtained a HE I.T qualification.

With regard to feeling confident in personal IT literacy, departments A and C educators predominantly selected feeling confident in using most e-learning tools within the VLE, as did their students; whereas department B educators and their students presented more varied responses. The majority of department B educators and their students selected they were confident of being able to use most e-learning tools required, however 42% (n=5) of educators reported not being confident. Department B student responses ranged from 27% not confident (n=15) to 14% (n=8) selecting 'Very confident'. Notably, despite having the highest number of educators having completed in-house e-learning training, 80% (n=12) of department D educators recorded not being confident, in contrast to 66% of their students (n=27) who felt confident, with a further 10% (n=4) considering themselves very confident and able to use all e-learning functions.

Table 6: Information technology (I.T) qualifications and confidence in using e-learning.

department A	**Educator Respondents (n=5) Bold = Mean**		**Student Respondents (n=11) Bold = Mean**	
I.T Qualifications	**80% None (n=4)**	20% European Computer Driving Licence (n=1)	**45.5% None (n=5)**	**45.5% GCSE or equivalent** (n=5) HE qualification (n=1)
Previous E-learning Experience	**60% Self Taught e-teaching (n=3)**	40% Institution supported course (n=2)	**54.5% None (n=6)**	27.3% (n=3) e-learning at school 18.2% (n=2) e-learning post school
Computer Literacy	**80% confident – able to use most e-learning tools (n=4)**	20% Not confident – Basic e-authoring only (n=1)	**81.8% (n=9) Confident - Able to use most e-learning tools**	18.2% (n=2) Very confident - Can use all e-learning functions
department B	**Educator Respondents (n=12) Bold = Mean**		**Student Respondents (n= 56) Bold = Mean**	
I.T Qualifications	**83.3% None (n=10)**	16.7% European Computer Driving Licence (n=2)	**57.1% None (n=32)**	33.9% (n=19) GCSE or equivalent (n=0) and 8.9% (n=5) HE qualification
Previous E-learning Experience	**83.3% Self Taught e-teaching (n=10)**	8.3% None (n=1) 8.3% Some e-learning post School (n=1)	**33.9% (n=19) None**	32.1% (n=18) Some e-learning post school 21.4% (n=12) Some e-learning at School 12.5% (n=7) Highly experienced e-learner
Computer Literacy	**58.3% Confident - Able to use most e-learning tools (n =7)**	41.7% Not confident - Use basic e-authoring functions only (n=5)	**58.9% (n=33) Confident - Able to use most e-learning tools**	26.8% (n=15) Not confident - Use basic e-learning tools only 14.3% (n=8) Very confident - Can use all e-learning functions

department C	**Educator Respondents (n=7) Bold = Mean**		**Student Respondents (n=21) Bold = Mean**	
I.T Qualifications	**57.1% None (n=4)**	28.6% GCSE or Equivalent (n=2) 14.3% European Computer Driving Licence (n=1)	**66.7% (n=14) None**	23.8% (n=5) GCSE or equivalent, 4.8% (n=1) ECDL, and 4.8% (n=1) HE qualification
Previous E-learning Experience	**57.1% Self Taught e-teaching (n=4)**	42.9% Institution supported course in e-teaching (n=3)	**61.9% (n=13) Some e-learning at School**	14.3% (n=3) None, 14.3% (n=3) Some e-learning post School (n=1), and 3.6% (n=2) highly experienced.
Computer Literacy	**85.7% Confident - Able to use most e-learning tools (n=6)**	14.3% Not confident - Use basic e-authoring functions only (n=1)	**58.9% (n=10) Confident - Able to use most e-learning tools**	38.1% (n=8) Not confident - Use basic tools only, and 14.3% (n=3) Very confident - use all e-learning functions
department D	**Educator Respondents (n=15) Bold = Mean**		**Student Respondents (n=41) Bold = Mean**	
I.T Qualifications	**60.0% None (n=9)**	40.0% European Computer Driving Licence (n=6)	**51.2% (n=21) GCSE or equivalent**	46.3% None (n=19), and 2.4% ECDL (n=1)
Previous E-learning Experience	**60.0% Institution supported course in e-teaching (n=9)**	20.0% Self Taught e-teaching (n=3) 20.0% Some e-learning post School (n=3)	**56.1% (23) Some e-learning at School**	29.3% None (n=12), and 14.6% Some e-learning post School (n=6)
Computer Literacy	**80.0% Not confident - Use basic e-authoring functions only (n=12)**	20.0% Confident - Able to use most e-learning tools (n=3)	**65.9% (n=27) Confident - Able to use most e-learning tools**	24.4% Not confident - Use basic e-learning tools only (n=10), and 9.8% Very confident (n=4)

Table 6: Information technology (I.T) qualifications and confidence in using e-learning (continued)

4.3: Q3. What does e-learning mean to you?

Thirty two of the thirty four educators gave a definition of e-learning, along with 117 of the 127 student respondents. Each definition was categorised into one of three definition types by the author, and as can be seen from Table 7, definitions proved largely process focused, particularly for students (n=64, 55% of question respondents being process based, compared to 37% (n=43) for technical definitions, and just 9% (n=10) of definitions being pedagogically (communication or interaction) focused. Educator respondents defined e-learning in terms of process 44% of the time (n=14) with a technical focus in 34% of definition (n=7) as opposed to 7 pedagogical focused definitions relating to communication or interaction (22% of educator respondents).

Table 7: Educator and student definitions of e-learning.

Educator Definitions	**Focus of Definition**			
	Technical	**Process**	**Pedagogy**	**Don't Know**
Dept. A Educators	1	3	1	0
Dept. B Educators	4	3	3	0
Dept. C Educators	0	4	2	0
Dept. D Educators	6	4	1	0
Sub-total	**11**	**14**	**7**	**0**
Student Definitions	**Focus of Definition**			
	Technical	**Process**	**Pedagogy**	**Don't Know**
Dept. A Student	4	4	3	0
Dept. B Student	12	30	4	0
Dept. C Student	4	16	1	0
Dept. D Student	23	14	2	0
Sub-total	**43**	**64**	**10**	**0**

A full list of the free text definitions for questions 3 and 4 are given within the Excel Spreadsheet on the accompanying CD-ROM. Illustrative examples for the technical focused definitions were:

> *Technically, it can mean the use of any IT equipment to aid learning, but often means computer based learning resources.* (Dept. B, Educator 12)
>
> *The delivery of online learning materials over the intra or inter-net for students to access in their own time.* (Dept. D, Educator 10)

E-learning comprises any sort of electronic learning with the teaching delivered through Internet, video, television, and CD-ROM.

(Dept. A, Student 11)

Examples of process focused definitions included:

Support materials from a module are completed online and then discussed in class. (Dept. C, Student 1)

Developing guided independent learning materials for access by students off campus (Dept. A, Educator 4)

Whilst pedagogically focused definitions included:

It is a method of students learning online. It should be supported by a lecturer also online at the SAME time in case the students need support.

(Dept. B, Educator 6)

Using a VLE to engage with students. This goes beyond 'reading on-screen' and includes 'dialogue' between students and the teacher. e-learning includes directed tasks and reflections.

(Dept. A, Educator 1)

Some educators also highlighted the view that e-learning was either in support of, or as a replacement for, 'traditional' classroom based learning, for example:

Materials developed IN SUPPORT of learning in the class room.

(Dept. A, Educator 5)

The use of technology to facilitate learning, in particular INSTEAD of class based learning with the teacher in front of you.

(Dept. C, Educator 7)

Furthermore, although there appeared some synergy between educator and student definitions of e-learning in regards to a process focused definition as opposed to a communication focused view, some students took the opportunity to define e-learning negatively in terms of suggesting feelings of unsupported learning, for example:

Online learning that is completed without support of teaching staff

(Dept. A, Student 3)

Learning a subject independently at home via directed learning from a tutor -should be followed up in class, but often not. (Dept. B, Student 38)

Other students appeared more positive in their attitude when defining e-learning:

> *Working via a computer from home or the library, Useful if you have missed a lecture.* (Dept. C Student 17)
>
> *Online learning. I find this useful as I can develop my own learning on things I need more knowledge with.* (Dept. D Student 12)

4.4: Q4. What does the term blended learning mean to you?

Respondents were asked to provide a definition of blended learning, to explore if a consistent definition was present within and across departments. Again 33 of the 34 educators provided an answer to Q4, whilst 111 students responded. Table 8 shows 29 students replied they did not know what blended learning meant, with the majority of these students being from department D. This result suggested the term was not used in educator / student interaction within the department D undergraduate healthcare programme.

Table 8: Educator and student definitions of blended learning.

Educator Definitions	**Focus of Answer**			
	Technical	**Process**	**Pedagogy**	**Don't Know**
Dept. A Educators	0	4	1	0
Dept. B Educators	2	5	3	0
Dept. C Educators	0	6	0	0
Dept. D Educators	0	12	0	0
Sub-total	**2**	**27**	**4**	**0**
Student Definitions	**Focus of Definition**			
	Technical	**Process**	**Pedagogy**	**Don't Know**
Dept. A Student	5	6	0	0
Dept. B Student	4	32	1	6
Dept. C Student	2	14	1	2
Dept. D Student	1	15	2	21
Totals	**12**	**67**	**4**	**29**

Respondents from departments A and D defined 'blended learning' in terms of teaching process, suggesting a definition of 'the blend' focused on alternating classroom attendance with independent e-learning.

> *The module would involve both face-to-face teaching and e-learning*
>
> (Dept. A, Educator 1)

Alternating between the classroom and online delivery

*(*Dept. D, Educator 4*)*

Departments B and C presented a mixed picture, with some educators defining *blended learning* in terms of providing alternating classroom delivered sessions, distinct from online guided study experiences, whilst others considered alternating classroom and online study as complementing the same session and learning outcomes.

Switching teaching methods between the classroom and the computer to provide options for the student and time for the lecturer

(Dept. B, Educator 12)

Rotating between face-to-face and online guided study, followed by feedback. (Dept. B, Educator 7)

A now established practice of using electronic resources housed on the net to support, and less preferably, replace class based learning

(Dept. C, Educator 3)

Again differing pedagogical approaches are seen to be implicit within the definitions.

There appeared sufficiently differing definitions in response to questions 3 and 4 to suggest further exploration of this area would be useful during the semi-structured interviews and focus groups.

4.5: Q5. Focus of module web space e-authoring

Participants were asked to read the statements relating to figure 8 and select the option that most closely related to the way they either wrote (for educators) or used (for students) e-learning materials. Figures 8 (a & b) and 8 (a & b) indicated that educators authored e-learning materials with a predominantly information management and learning resource provision motive, as opposed to being motivated by a desire to engage in e-communication and use of discussion boards.

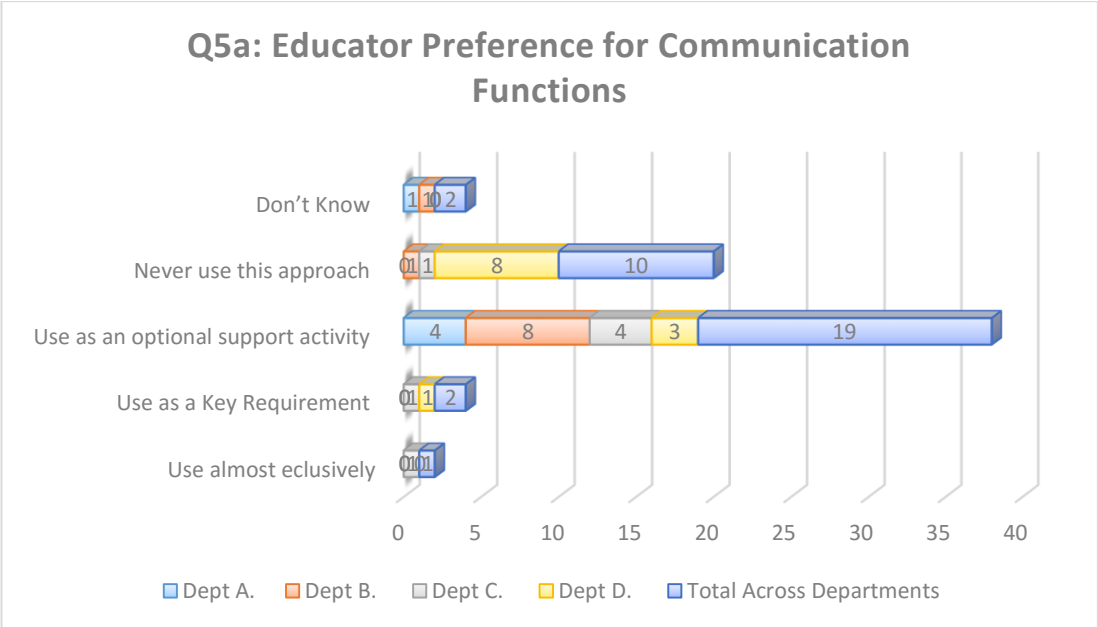


Figure 8: Q5a. I write e-learning resources that require students to communicate with each other to learn via the discussion groups and e-forums.

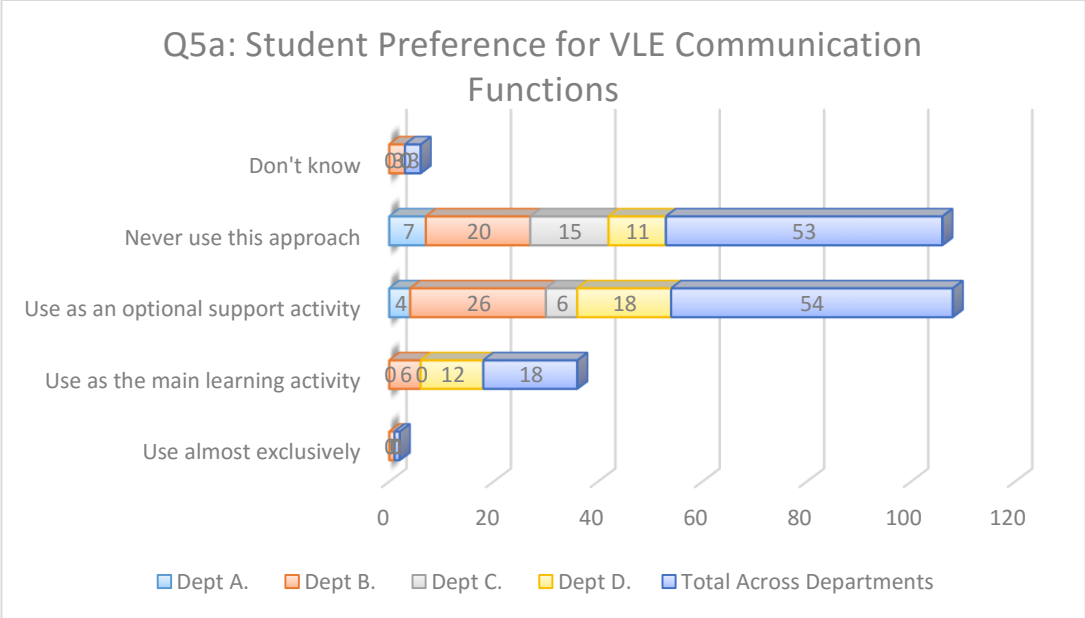


Figure 9: Q5a. I use e-learning resources that require students to communicate with each other to learn via the discussion groups and e-forums.

Figure 8 and 9 indicated that the use of online communication based, discursive e-learning is predominantly viewed as an optional support activity by 56% of educators (n=19) and 42% of students (n=54). 41% of students (n=53) reporting they never used this approach when engaged in e-learning. This finding is supported by Q5b, where

88% (n=30) of educators and 78% (n=100) of students preferred to use the university's information technology resources to access information 'almost exclusively' or 'as the main learning activity', as can be seen in figures 10 and 11.

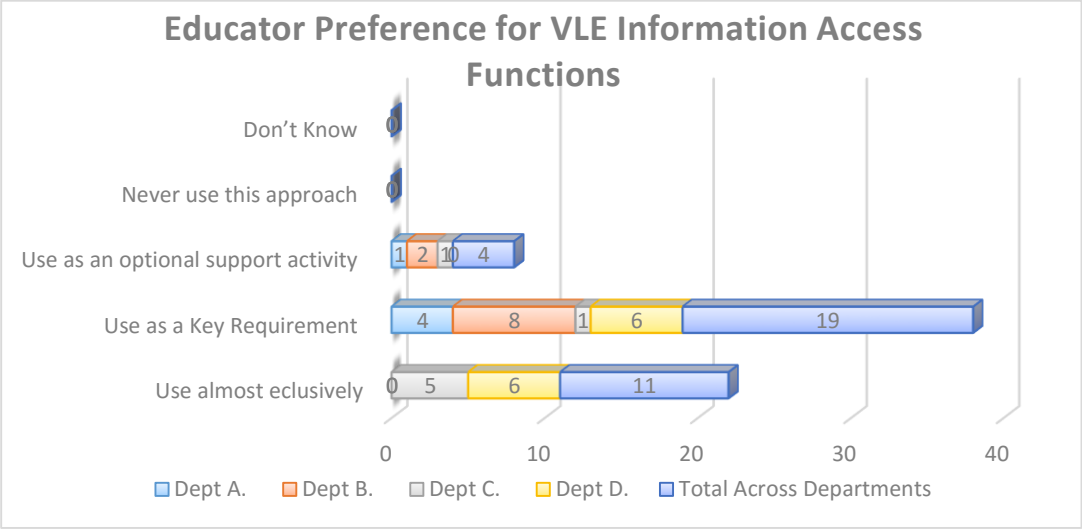


Figure 10: Q5b. I write e-learning resources that mainly help students to access information and reference materials.

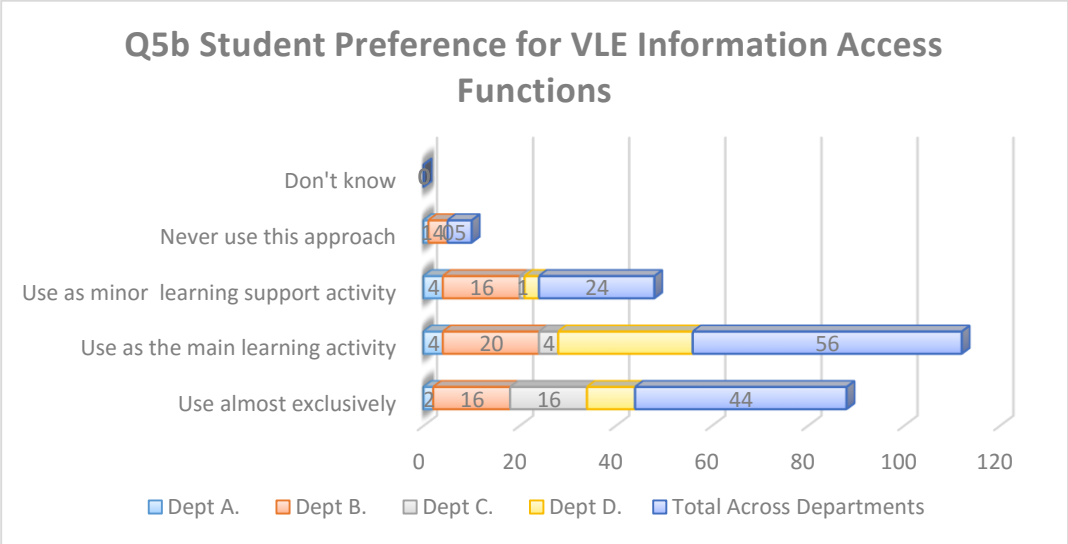


Figure 11: Q5b. I use e-learning resources that mainly help students to access information and reference materials.

4.6: Q6: Educator versus student controlled learning

Q6 aimed to elicit whether educators and students had a preference for teacher-controlled as opposed to student-controlled e-learning.

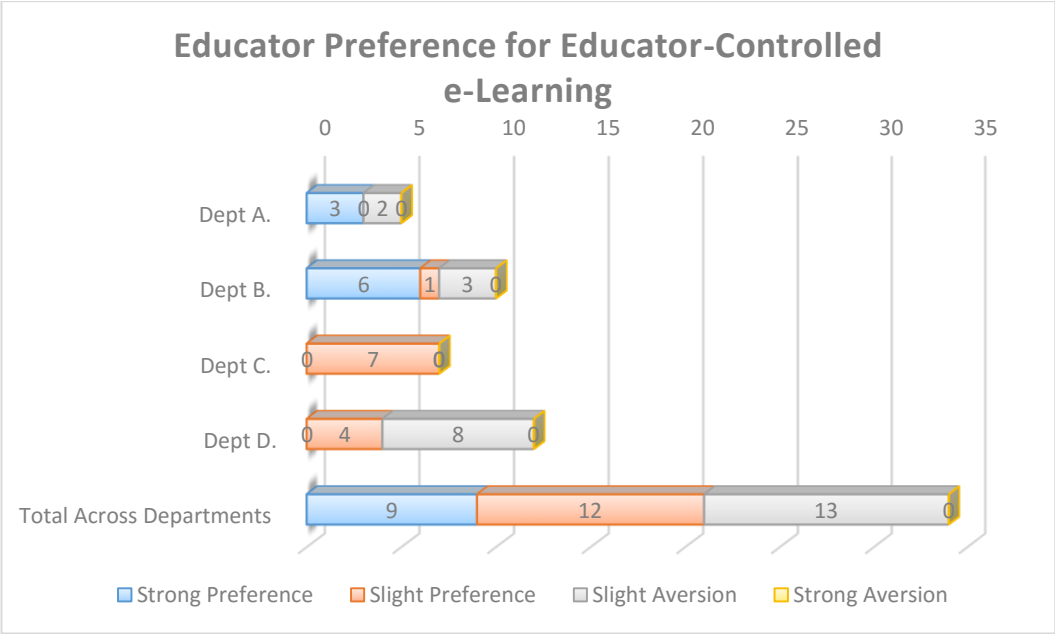


Figure 12: Q6a. I prefer e-learning strategies to be closely guided and tightly structured regarding time and activity.

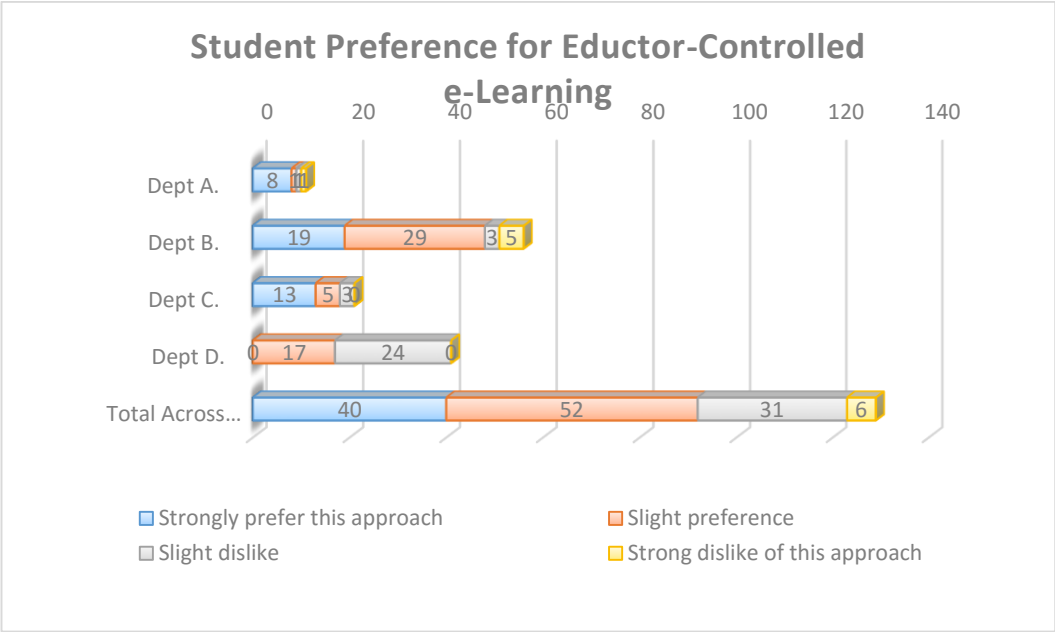


Figure 13: Q6a. I prefer e-learning to be closely guided and tightly structured regarding time and activity.

Responses from Q6a suggested proportionally more educator and student respondents preferred educator controlled e-learning within departments A, B and C. A majority of department D staff (67%) returned a slight dislike of such an approach; with 59% of Dept. D students responding similarly.

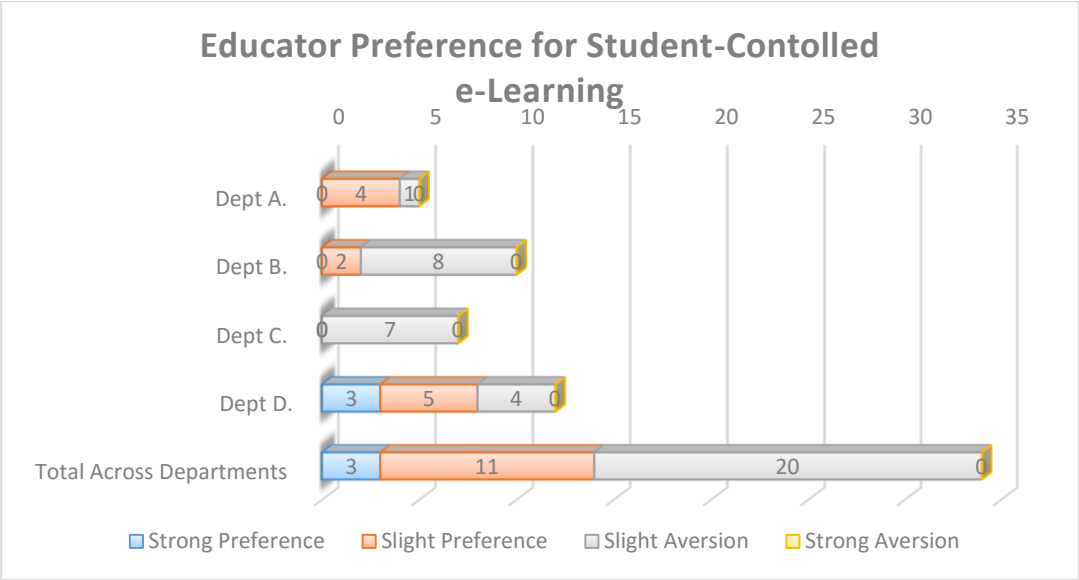


Figure 14: Q6b. I prefer e-learning strategies which are loosely timed with high levels of student control and choice of activity.

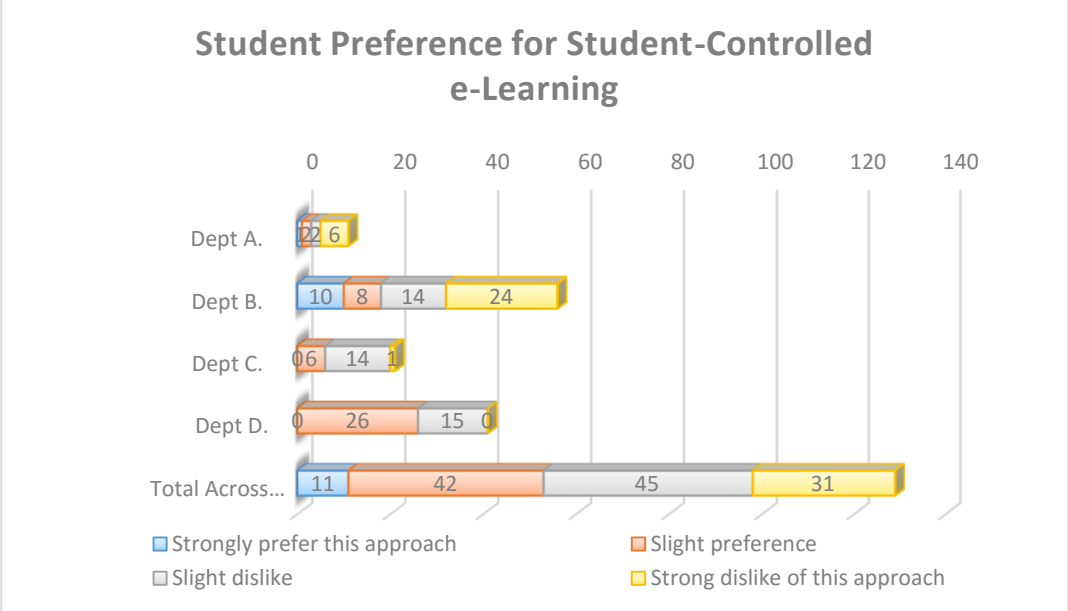


Figure 15: Q6b. I prefer e-learning which are loosely timed with high levels of student control and choice of activity

Q6b corroborated the same pattern of preference across departments.

4.7: Q7 Personal and educational use of information technology.

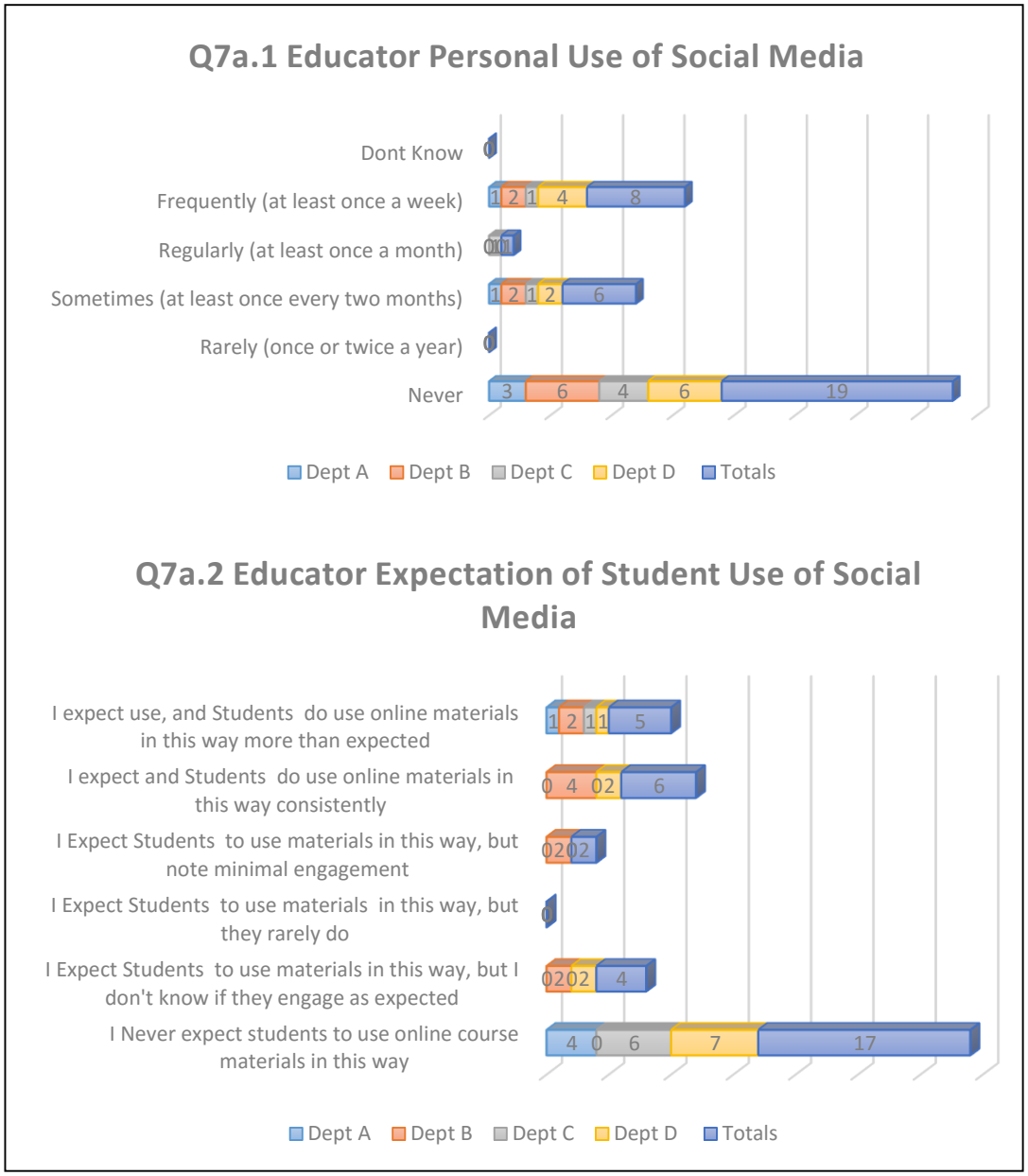


Figure 16: Q7a/ Parts 1 & 2: Educator personal use of social media and corresponding expectations of their students.

Although, in no way quantitatively significant, Figure 16 suggests that the pattern of proportionately low educator personal use of social media, is largely in keeping with their low expectation of student use of social media when authoring e-learning. The comparable student question in Figure 17 however, shows high personal student use of social media and also low educational use when e-learning.

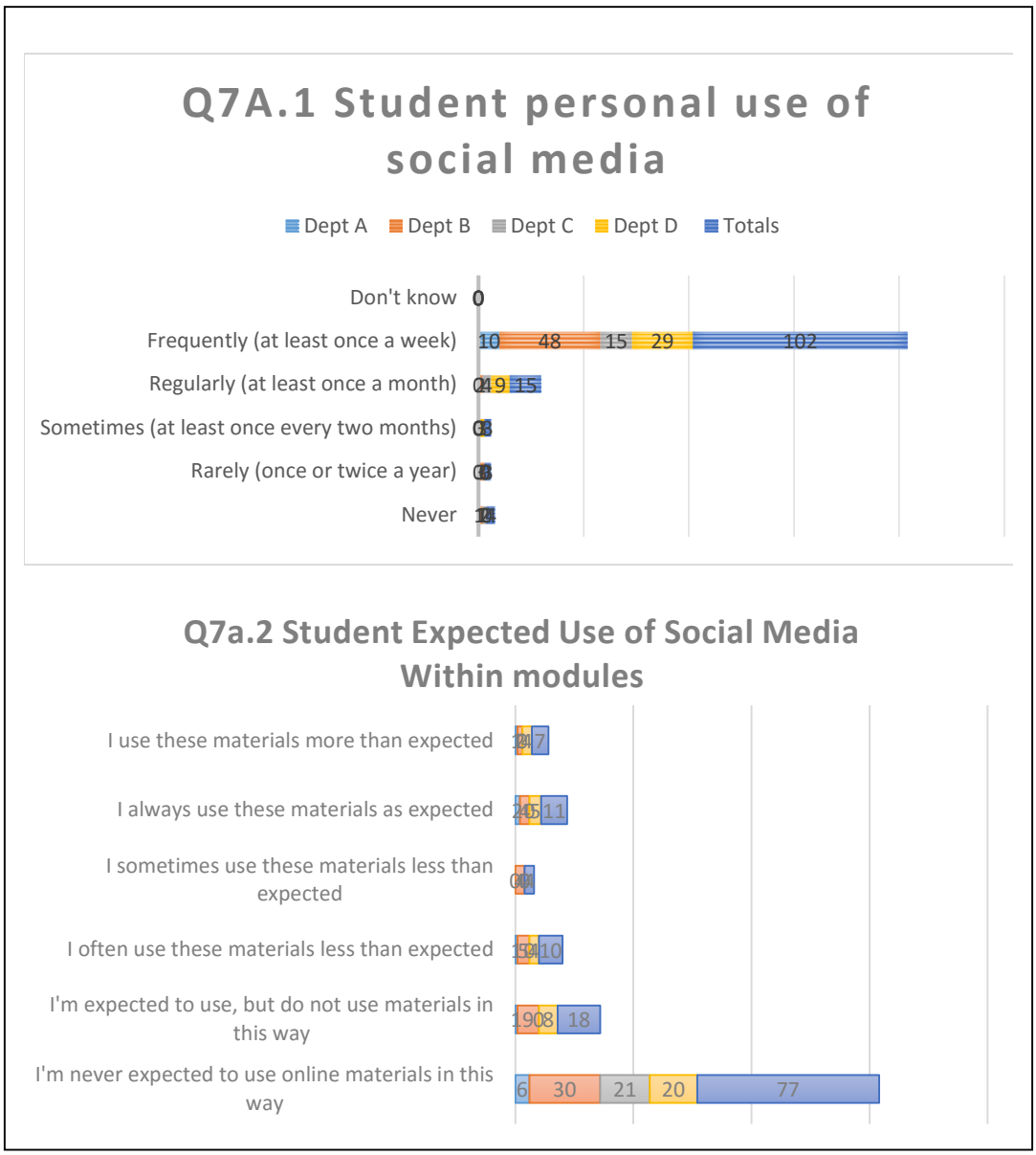


Figure 17: Q7a Parts 1 & 2: Student personal use of social media and perceived use of social media within module e-learning.

The next question explored the expectation that educators and students can readily access the internet from home via their own PC, with results for educators and students illustrated in Figure 18 and Figures 19 respectively.

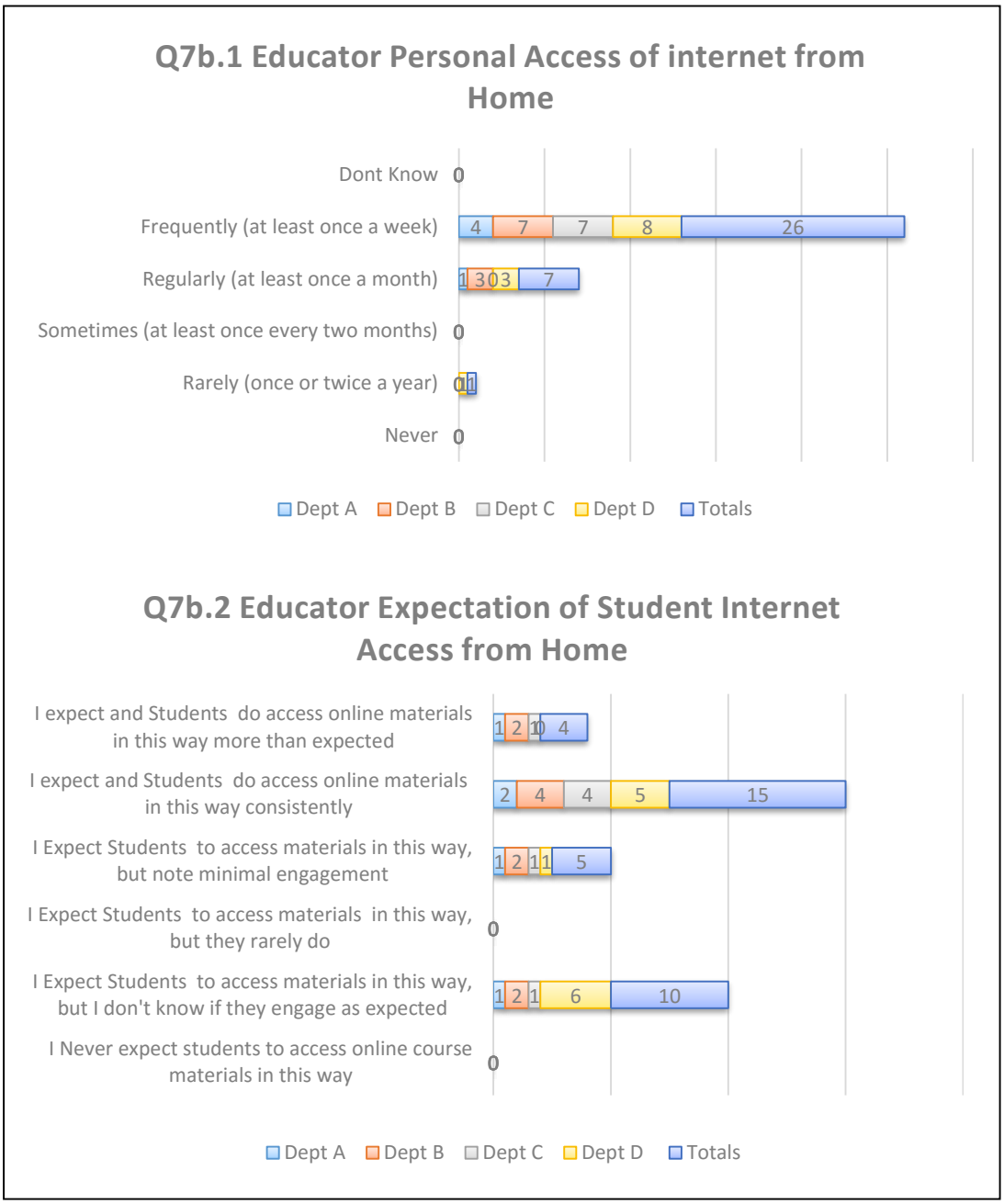


Figure 18: Q7b Parts 1 & 2: Educator personal access of internet from a home computer and expectation that students do the same.

Figure.18 shows that educators access the internet frequently from home, and shows 100% educator expectation that their students had home internet access to e-learning materials. Comparison of this data with the equivalent student question shows 98% of the students (n=124) have access to the internet from home, with the majority (88%) indicating they access materials as or more than expected.

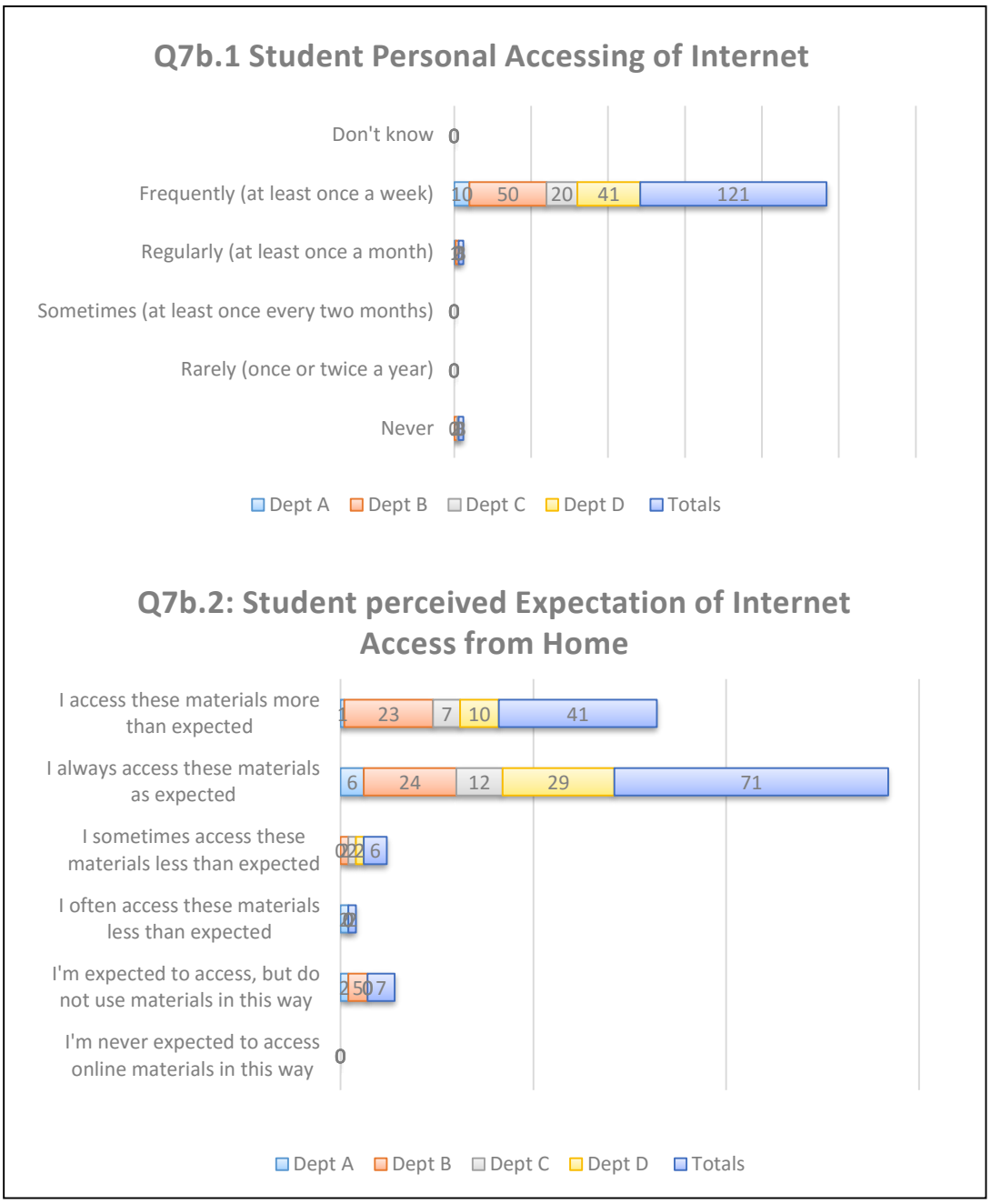


Figure 19: Q7b Parts 1 & 2: Student personal access of internet from home computer and perceived expectation that they do the same for university study.

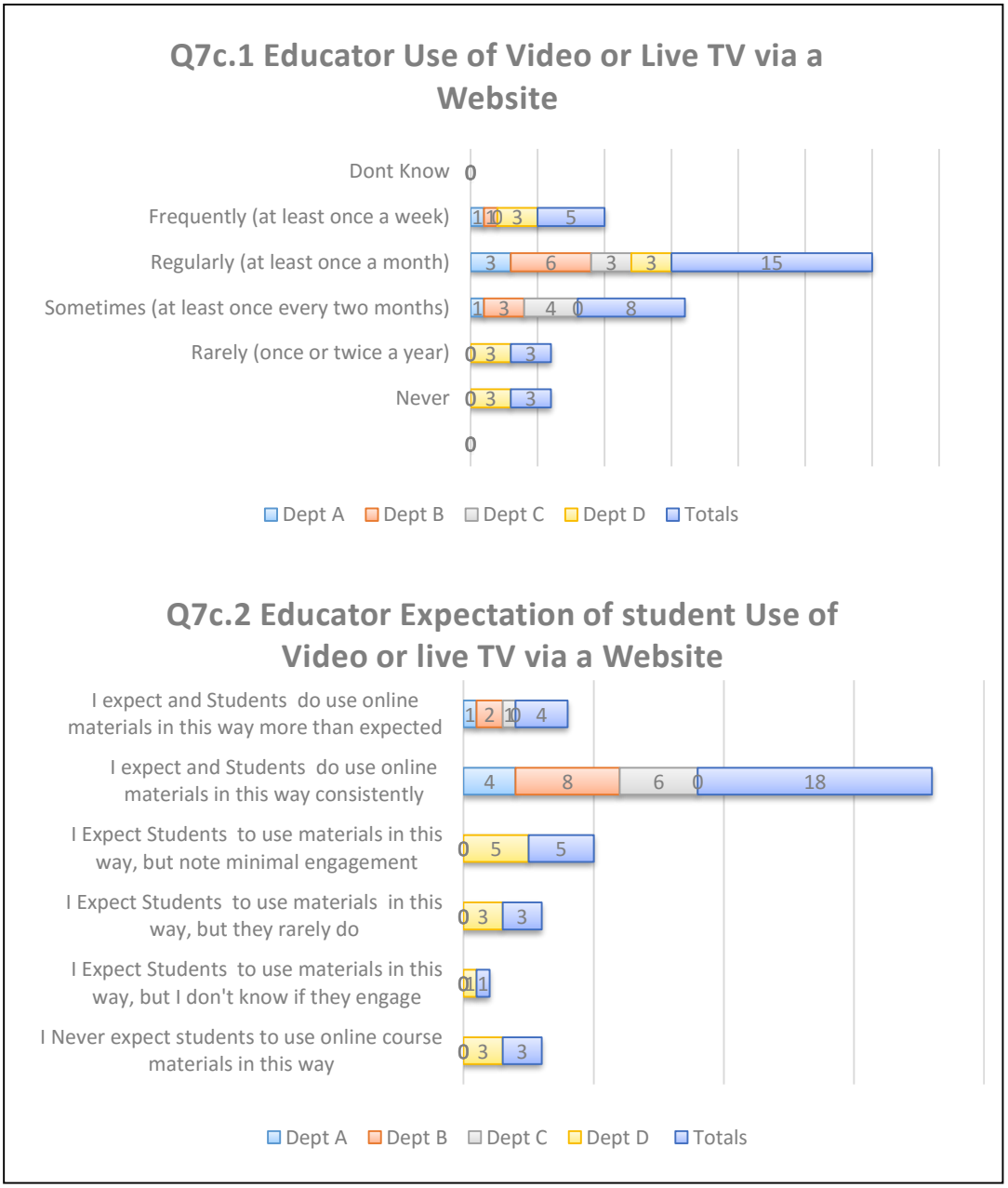


Figure 20: Q7c Parts 1 & 2: Educator personal use of video or live TV via a website and corresponding expectation that students engage in the same.

Question 7C explored how often respondents watched video or live TV via a website and showed 100% educator use to varying degrees (n=34), and, with the exception of three educators within department. D, expected students to use such embedded materials in their modules. Whereas departments A, B and C educators appeared confident regarding student engagement with these media formats, department D educators again appeared less so.

Student results for the corresponding question 7C suggested they too predominantly made use of web based video or Live TV to some degree (n=104, 88% overall) outside of university requirements; however a more mixed picture existed regarding whether they felt expected to use such media during e-learning, as illustrated in Figure 21.

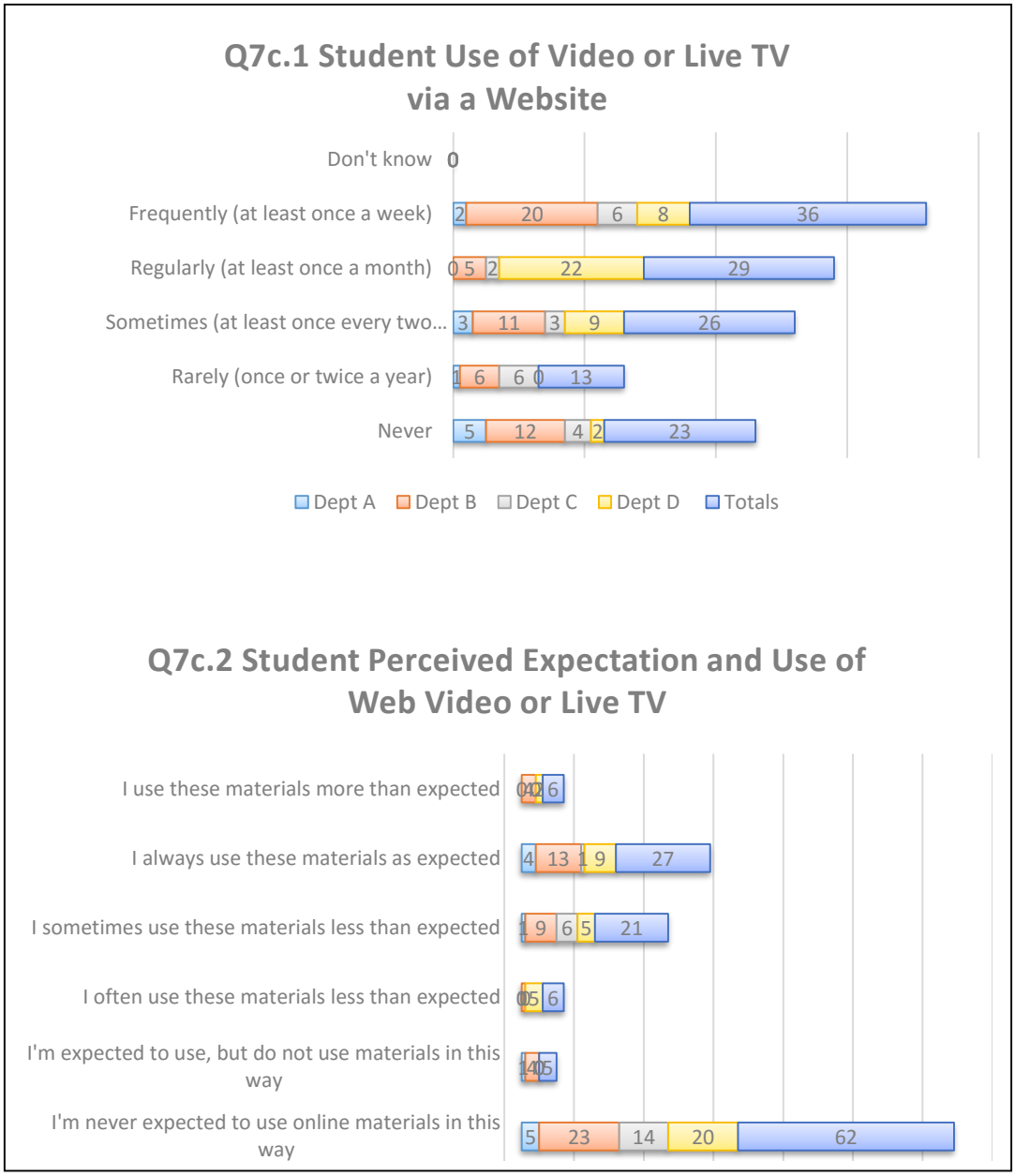


Figure 21: Q7c Parts 1 & 2: Student personal use of video or live TV via a website and perceived expectation that they engage in the same during e-learning.

Question 7D explored uploading of video or photographic content onto the internet. Figure 22 presented a mixed picture across the departments, whereby 42% (n=5) of

department D educators appeared to personally engage in this activity, whilst 100% (n=12) of the same respondents indicated they never expected their students to upload such material as part of e-learning. At least some educators from within each of the other departments however, reported they did expect students to upload photo or video content as part of their e-learning strategies.

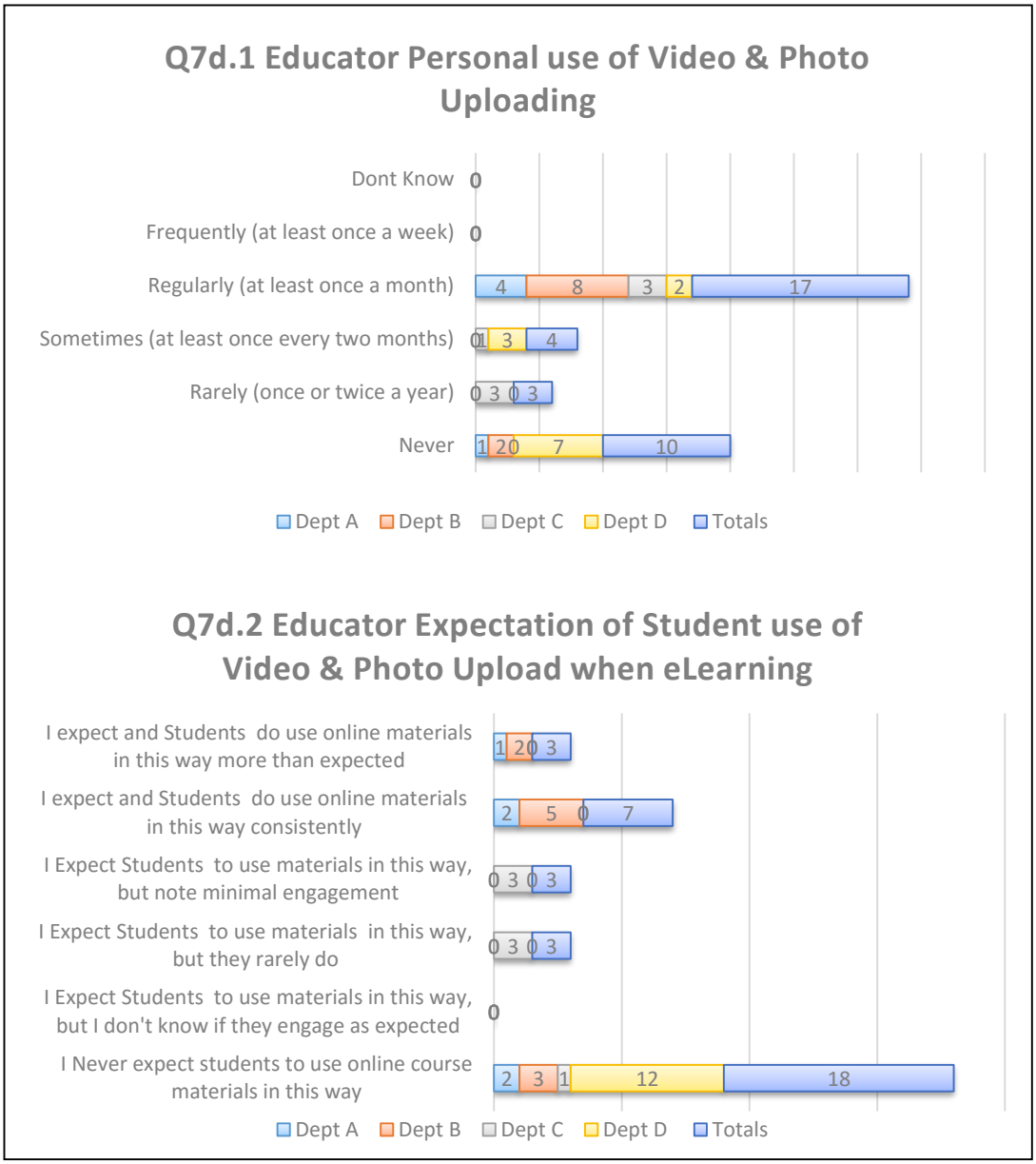


Figure 22: Educator Q7d Parts 1 & 2: Personal use of video and photograph internet uploading and corresponding expectation that students engage in the same.

Figure 23 gives the corresponding student responses, showing a mixed picture of personal use. The student response for perceived expectation that they engage in such

activity when e-learning within modules showed 69% (n=88) overall students responding with 'never expected' and 13% (n=17) of students selecting 'always use as expected'. Department D student responses, were largely in keeping with educator results for this question in that 83% (n=34) of students confirmed they were never expected to upload such content.

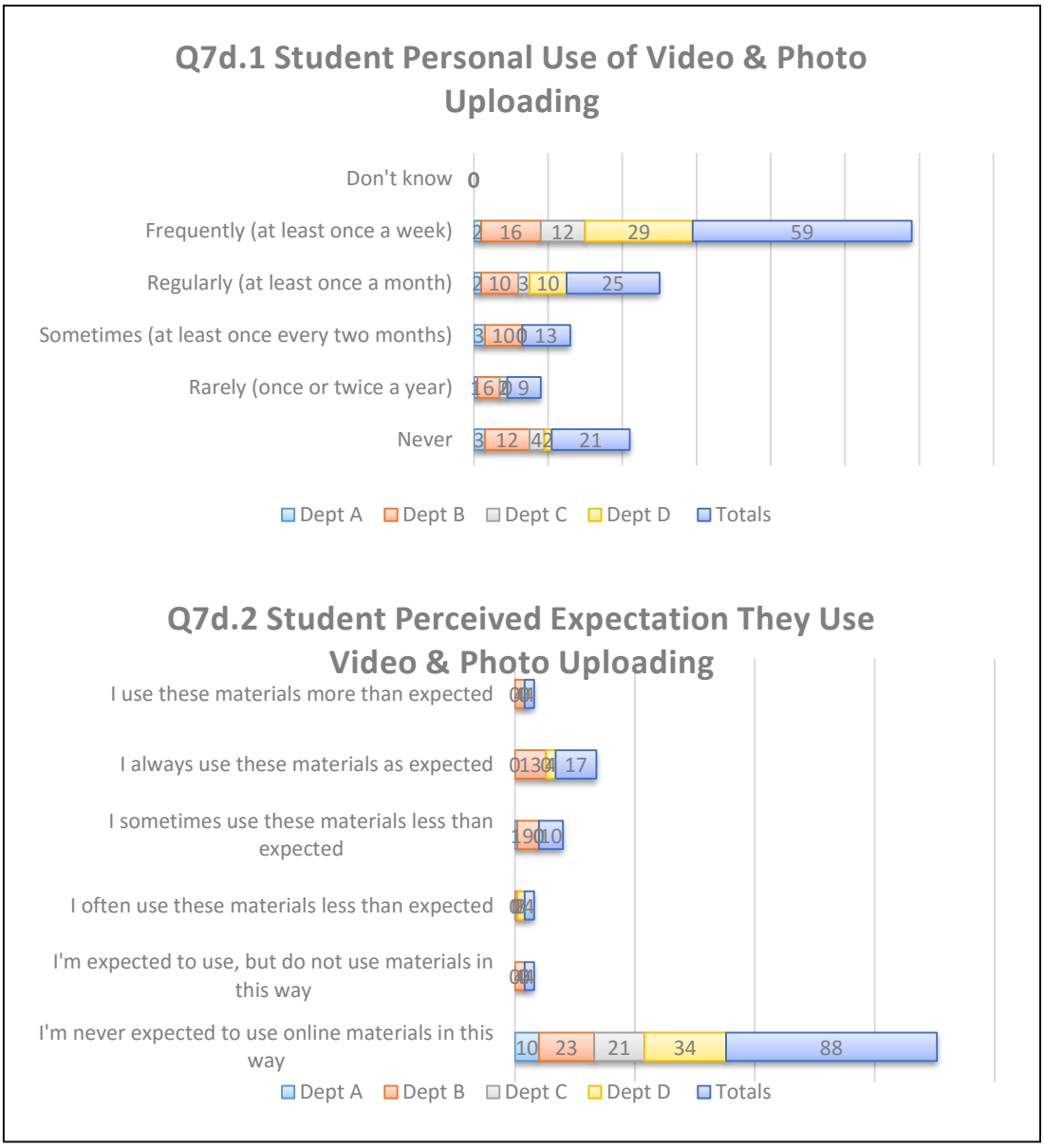


Figure 23: Student Q7d Parts 1 & 2: Personal use of video and photograph internet uploading and perceived expectation they engage in the same during e-learning.

Question 7e asked how often educators and students wrote about their views or passed on information via wikis or Blogs. The data presented in Figures 24 and 25 suggested

that the overall majority of educators across all four departments neither wrote to wikis or blogs outside of their undergraduate programme nor expect students to do so as a requirement of e-learning. Department D selecting the least student expectation of wikis and blog use at 92% (n=11). Student returns suggested predominantly low levels of personal use of wikis or blogs outside of the programme, with 84%, (n=107) stating they were never expected to do the same as part of module e-learning.

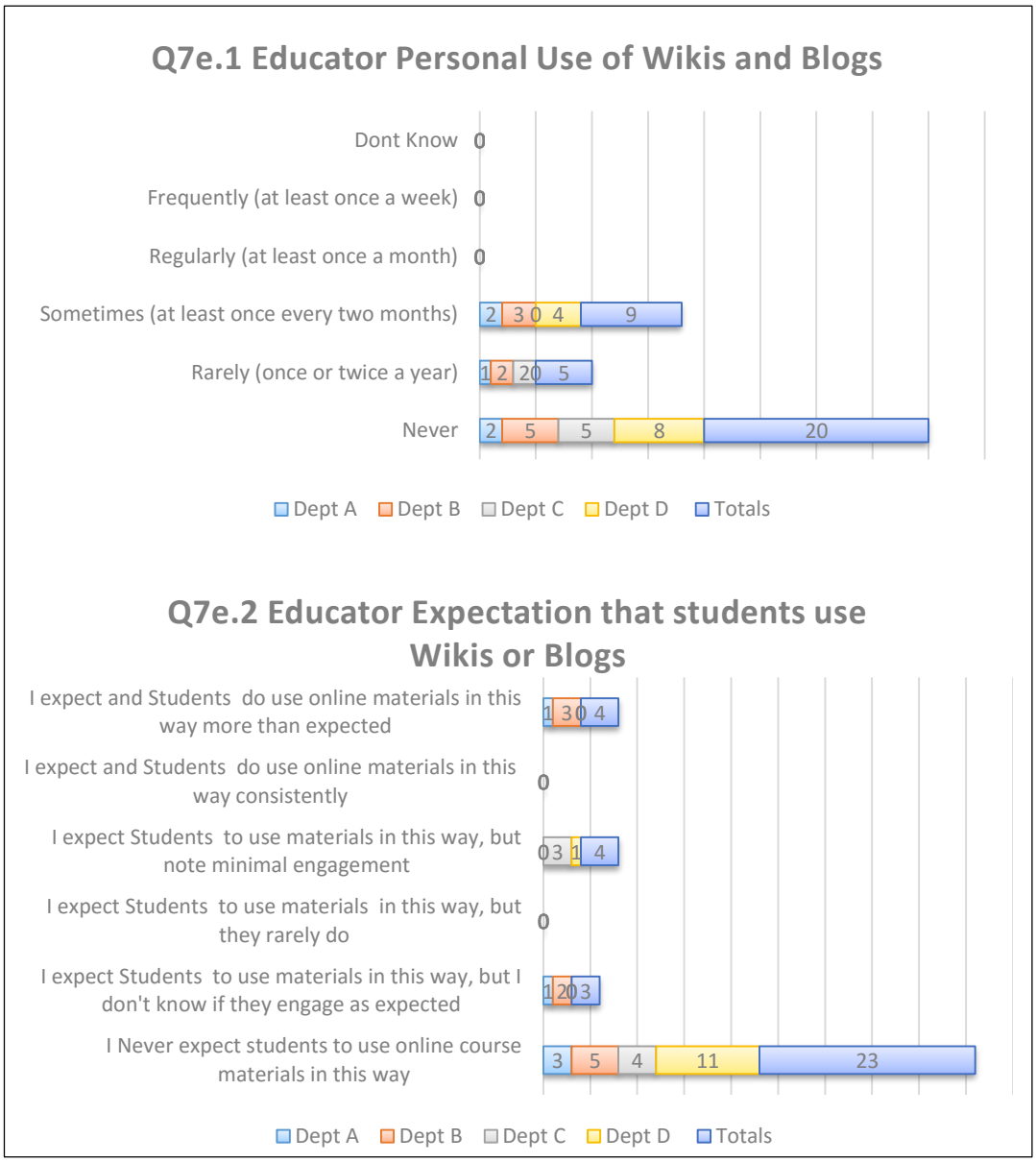


Figure 24: Educator Q7e Parts 1 & 2: Personal use of wikis and blogs to communicate information or views and expectation that students do the same when e-learning.

Figure 25: Student Q7e Parts 1 & 2: Personal use of wikis and blogs to communicate information or views and perceived expectation they do the same when e-learning.

When the data from Q7e (Figure 25) was reflected against the responses for Q7f (Figure 26) regarding use of module web spaces to access databases, library resources and search engines to gain information; responses further suggested an information management preference, as opposed to a communication motive when engaging in e-learning by both educators and students. In contrast to the low levels of personal and e-learning engagement noted in Q7e (communication use) responses, Q7f showed

100% educator personal use of information technology in this way, either 'frequently, at least once a week' (88%, n=30) or 'regularly, at least once a month', (12%, n=4); and educator expectation of student use when e-learning of 100%. Additionally, educator confidence that students engage as expected in this activity appeared high.

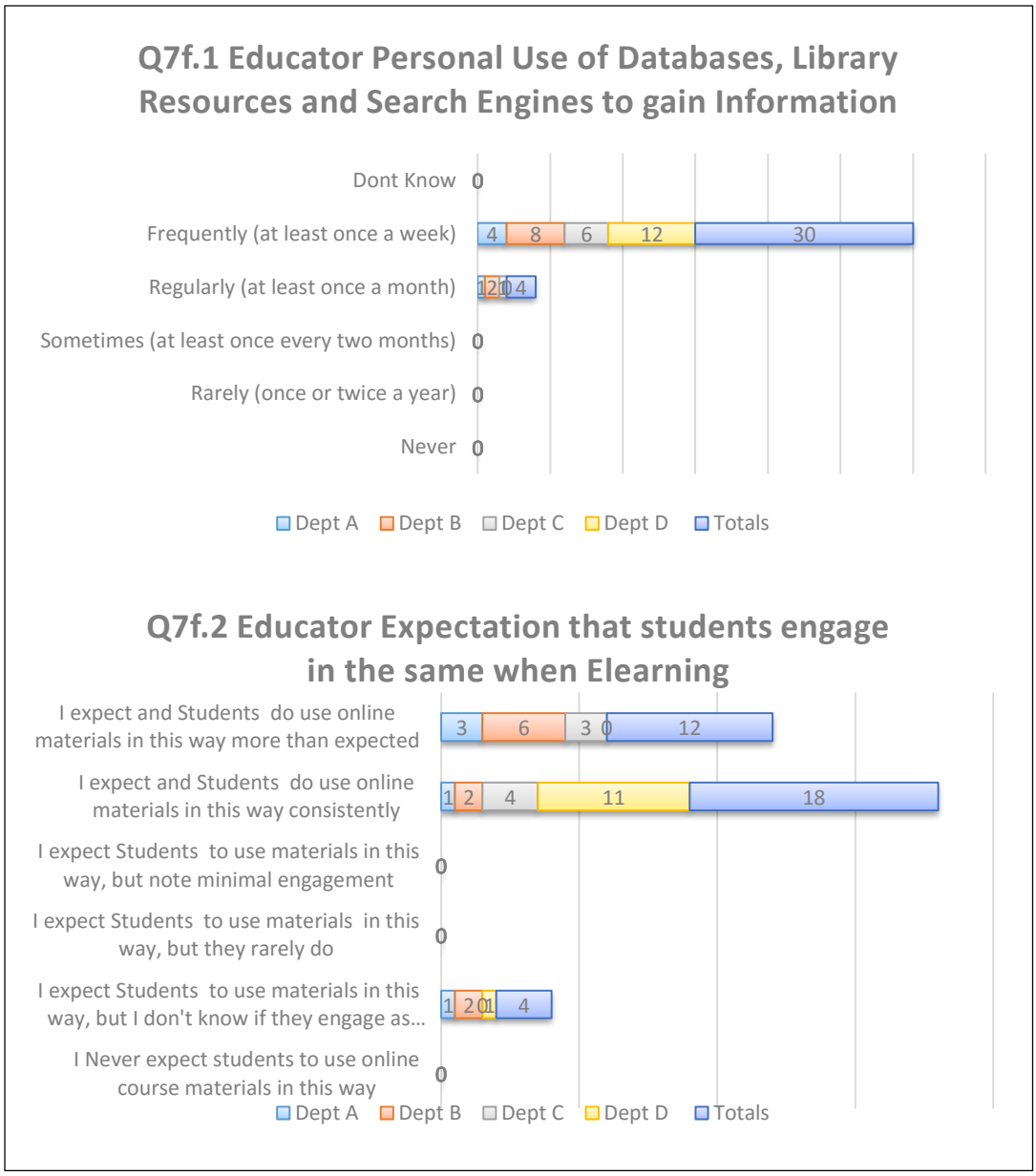


Figure 26: Educator Q7f parts 1 & 2: Personal use of databases, library resources or search engines to gain information and expectation students do the same when e-learning.

Interestingly, whereas 100% of students across all four departments selected they were expected to access databases, library resources and search engines to gain information as part of module e-learning; a more mixed picture of personal use was seen, whereby

the majority of students personally accessed such materials outside of their undergraduate studies to some degree (89%, n=113), a small proportion of department B and C students however, selected they never engage in such personal activity.

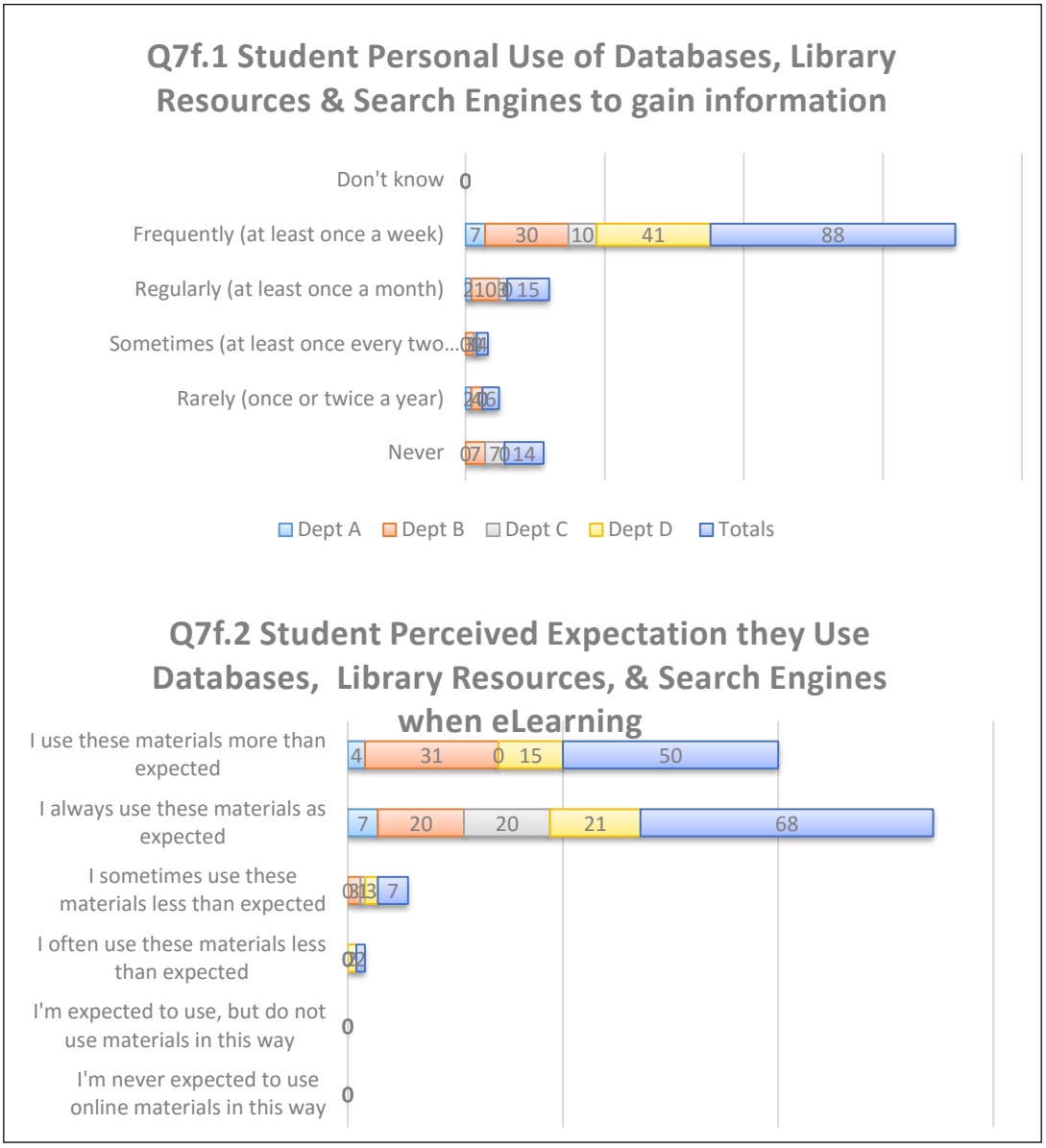


Figure 27: Student Q7f Parts 1 & 2: Personal use of databases, library resources or search engines to gain information and perceived expectation they do the same when e-learning.

Question 7g asked for frequency of accessing information via downloading podcasts. Respondent data gave a mixed picture across the departments whereby a slight majority of educators personally downloaded podcasts at varying levels of frequency. These results were broadly similar to responses to educator expectation that their

students downloaded podcasts with varying degrees of awareness of successful student engagement.

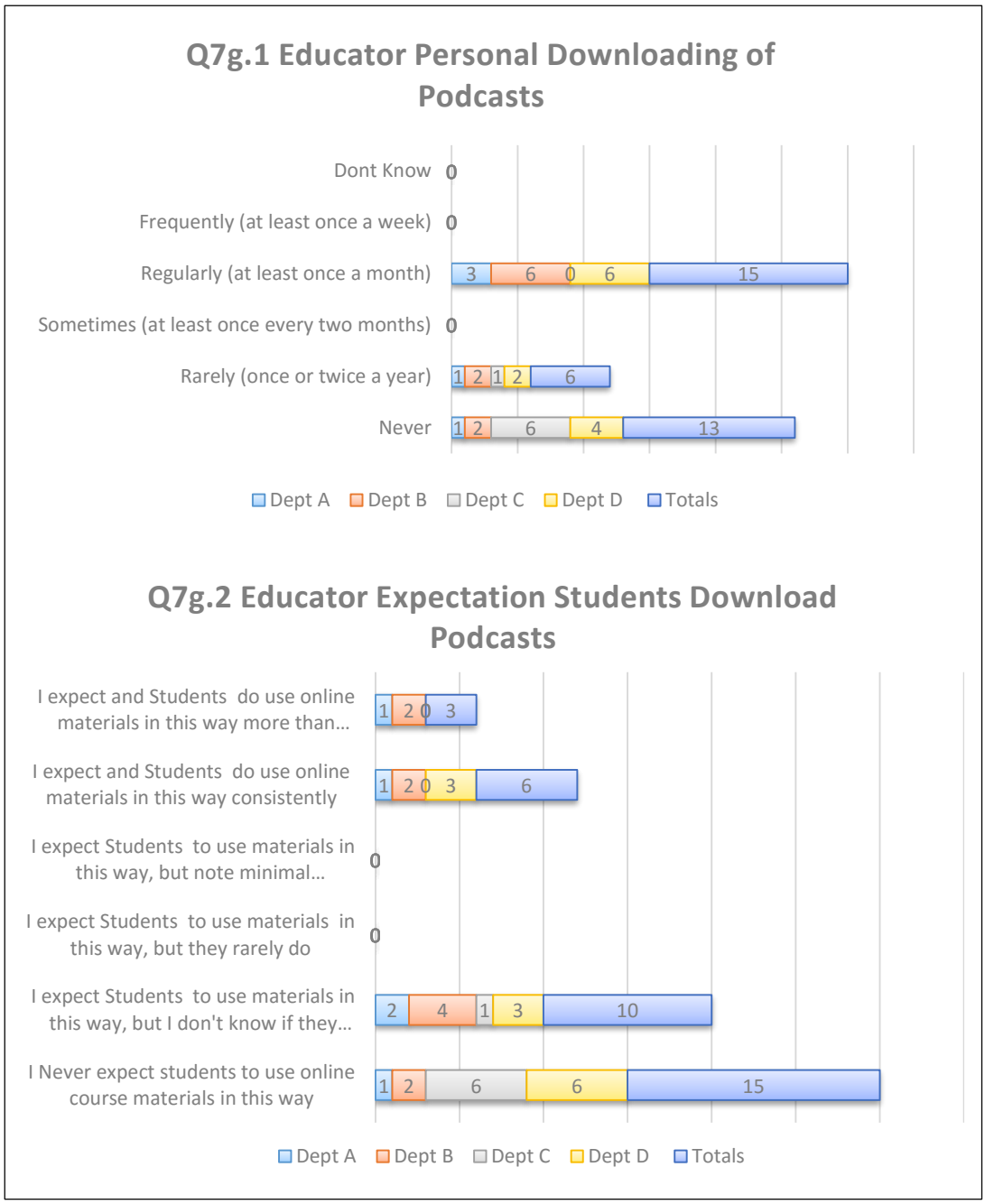


Figure 28: Educator Q7g Parts 1 & 2: Personal downloading of podcasts and expectation students engage in the same activity when e-learning.

In response to the same question, students returned data suggesting proportionately greater numbers who never downloaded podcasts personally, or felt expected to do so as part of modular e-learning than suggested by the corresponding educator data.

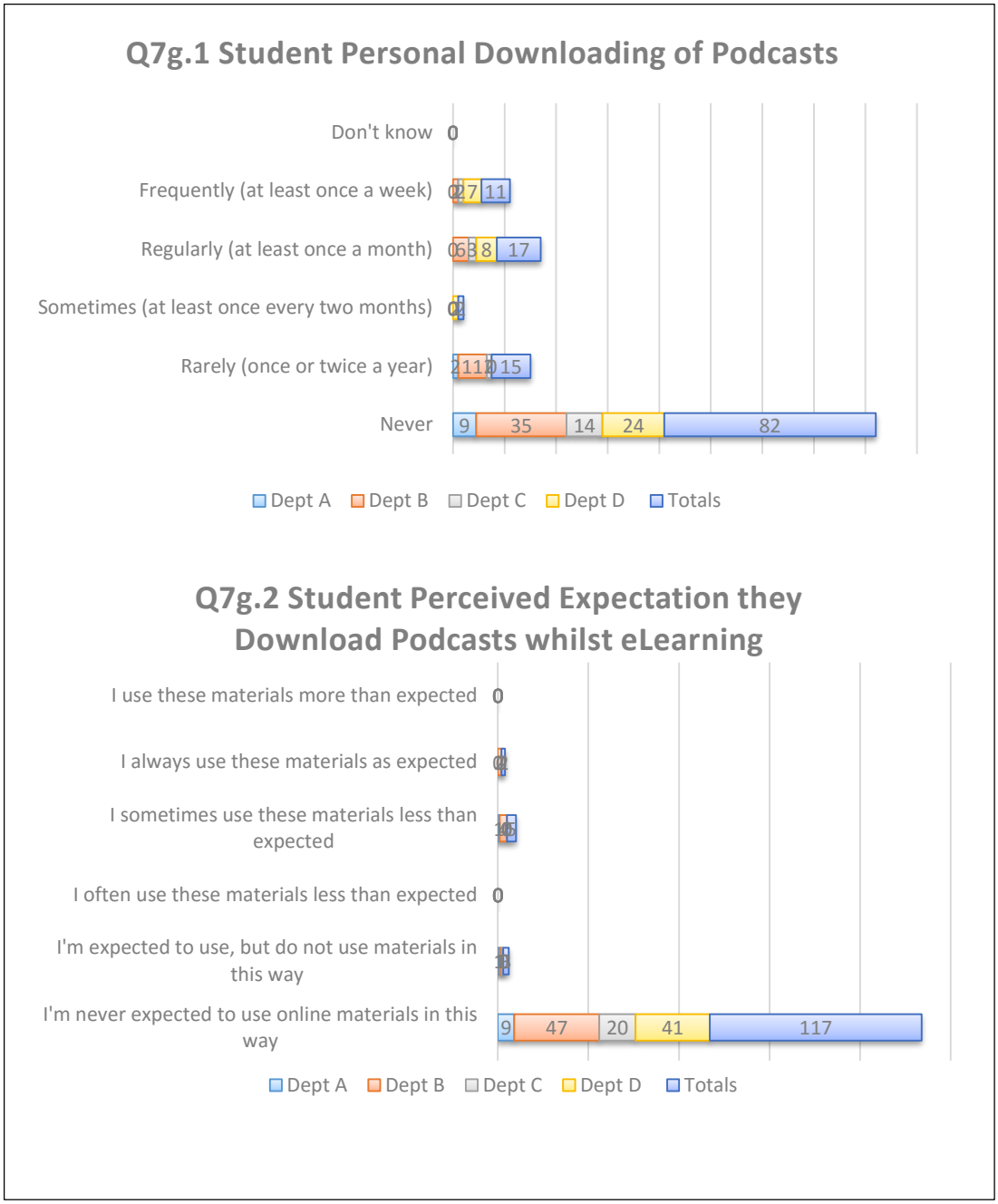


Figure 29: Student Q7g Parts 1 & 2: Personal downloading of podcasts and perceived expectation they do the same when e-learning.

Question 7H asked respondents to report their personal and expected interaction with online assessments and quizzes. Data within Figure 29 presented a mixed picture of personal educator engagement (overall 41%, n=14, never and 41%, n=14 sometimes), with mixed levels of expectation from all four departments that students used this activity whilst e-learning;

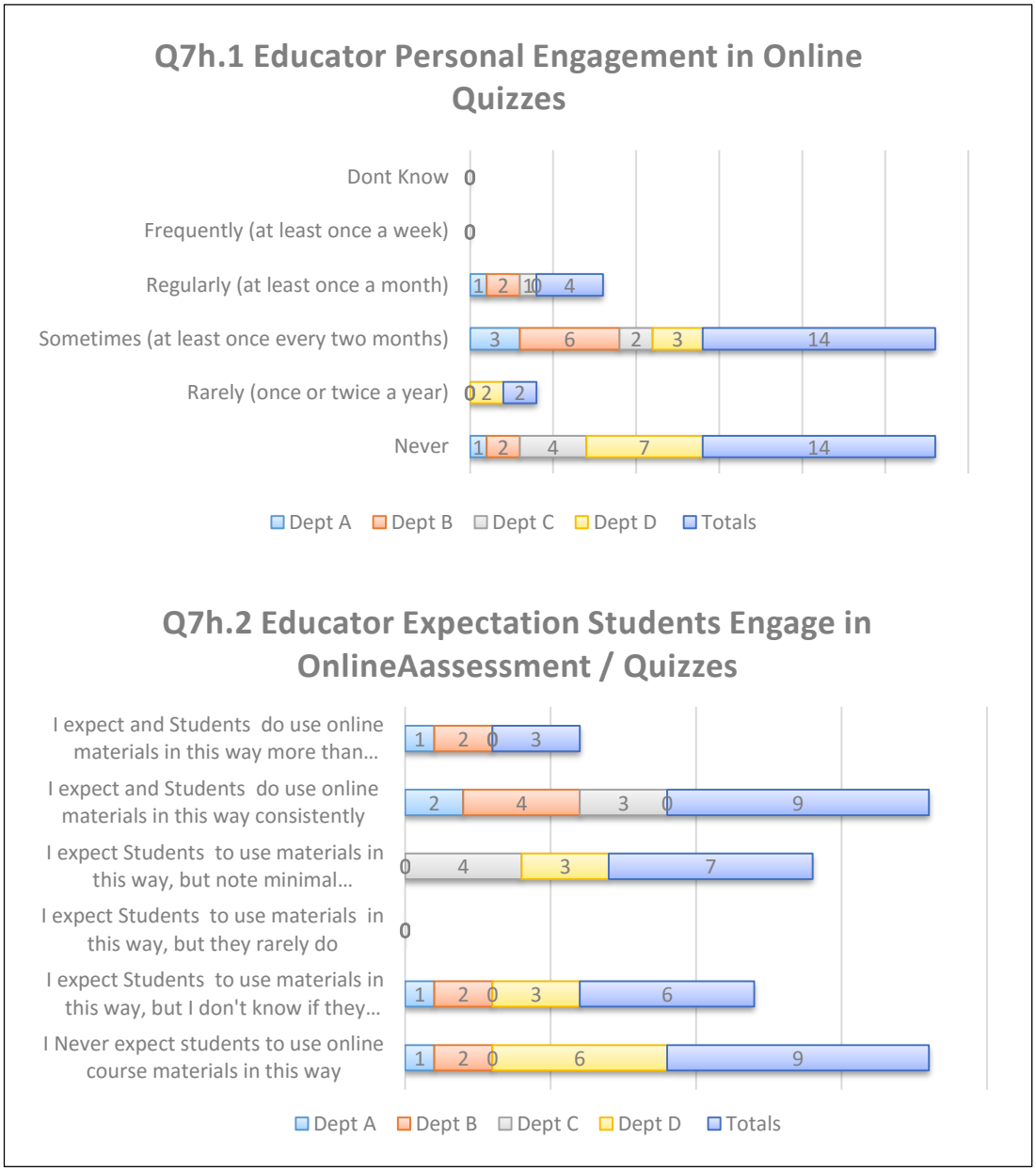


Figure 30: Educator Q7h Parts 1 & 2: Personal engagement with online assessments /quizzes and expectation students engage in the activity when e-learning.

Figure 31 showed students presented a similarly mixed pattern of personal engagement in online quizzes outside of their programme, and a varied picture for the level of e-learning engagement if and when expected by educators. department D students were the only department to return 100% as being expected to engage in this activity, with higher levels of students selecting they engaged as, or more than, expected, (n=35, 88%).

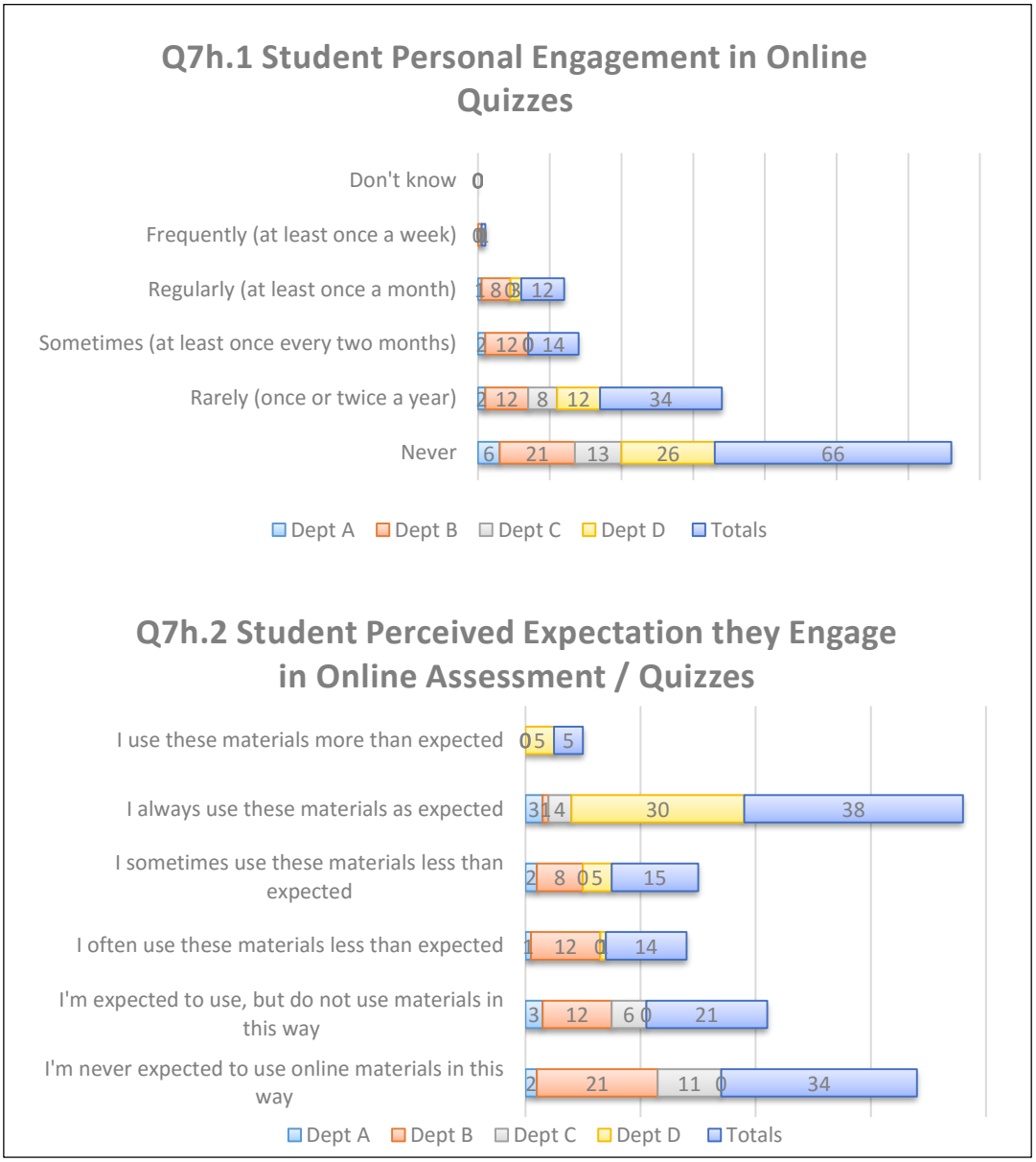


Figure 31: Student Q7h Parts 1 & 2: Personal engagement with online assessment or quizzes and perceived expectation they engage in the same when e-learning.

The next question explored if educators and students engaged in online reflective exercises. The educator data in Figure 32 showed department D to be the only department to predominantly report they 'never' expect students to reflect online (n=8, 67%) whereas all other departments expected online reflections as part of modular e-learning to some degree.

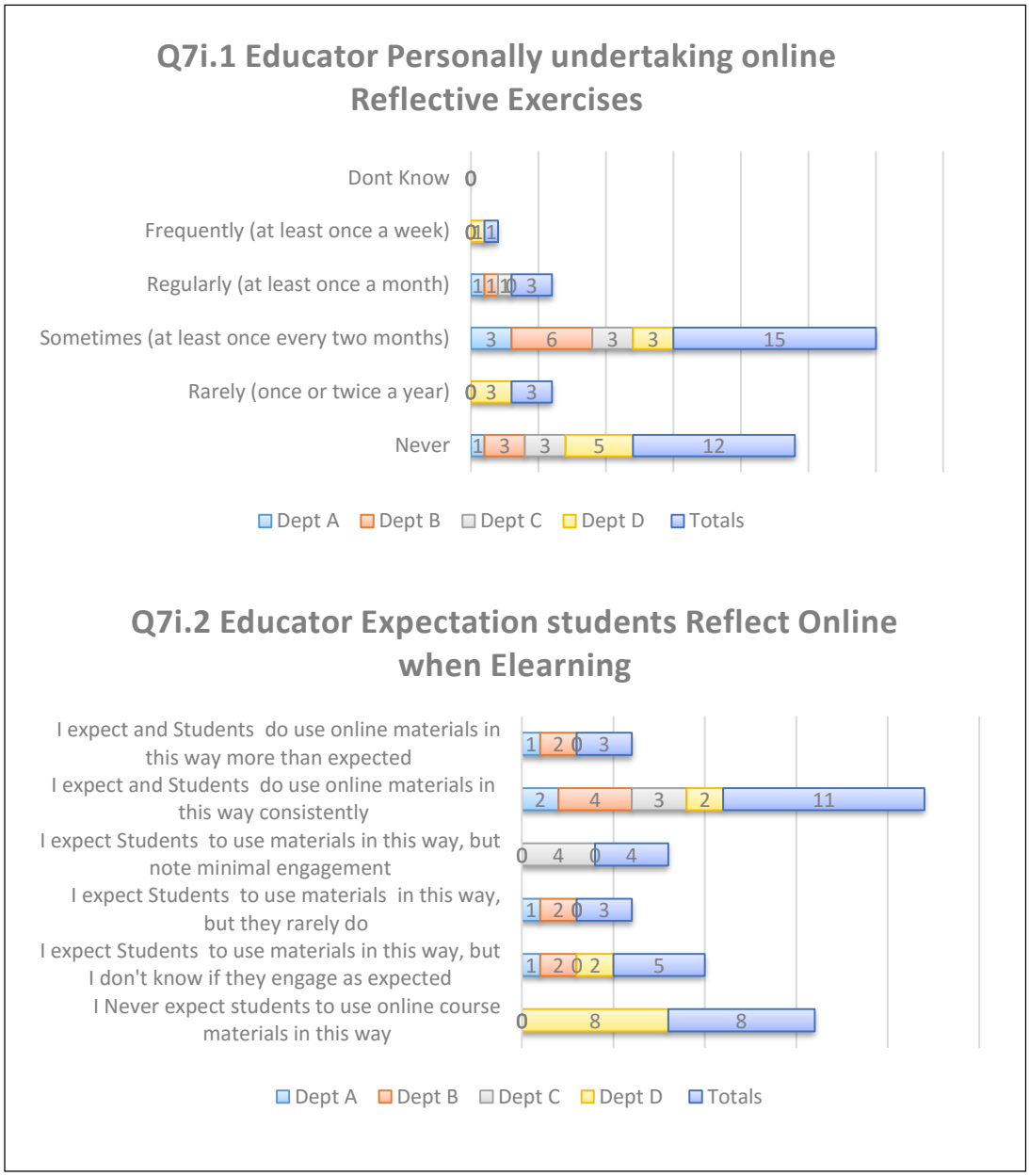


Figure 32: Educator Q7i Part 1 & 2. Personal engagement with online reflective exercises and expectation students engage in the activity when e-learning.

The educator finding above appeared to align with the corresponding Q7i student data in Figure 33, whereby 66% (n=27) of department D students agreed that they were never expected to undertake reflective exercises; as opposed to department A at 18% (n=2), department B at 19% (n=10), and department C at 33%, (n=7).

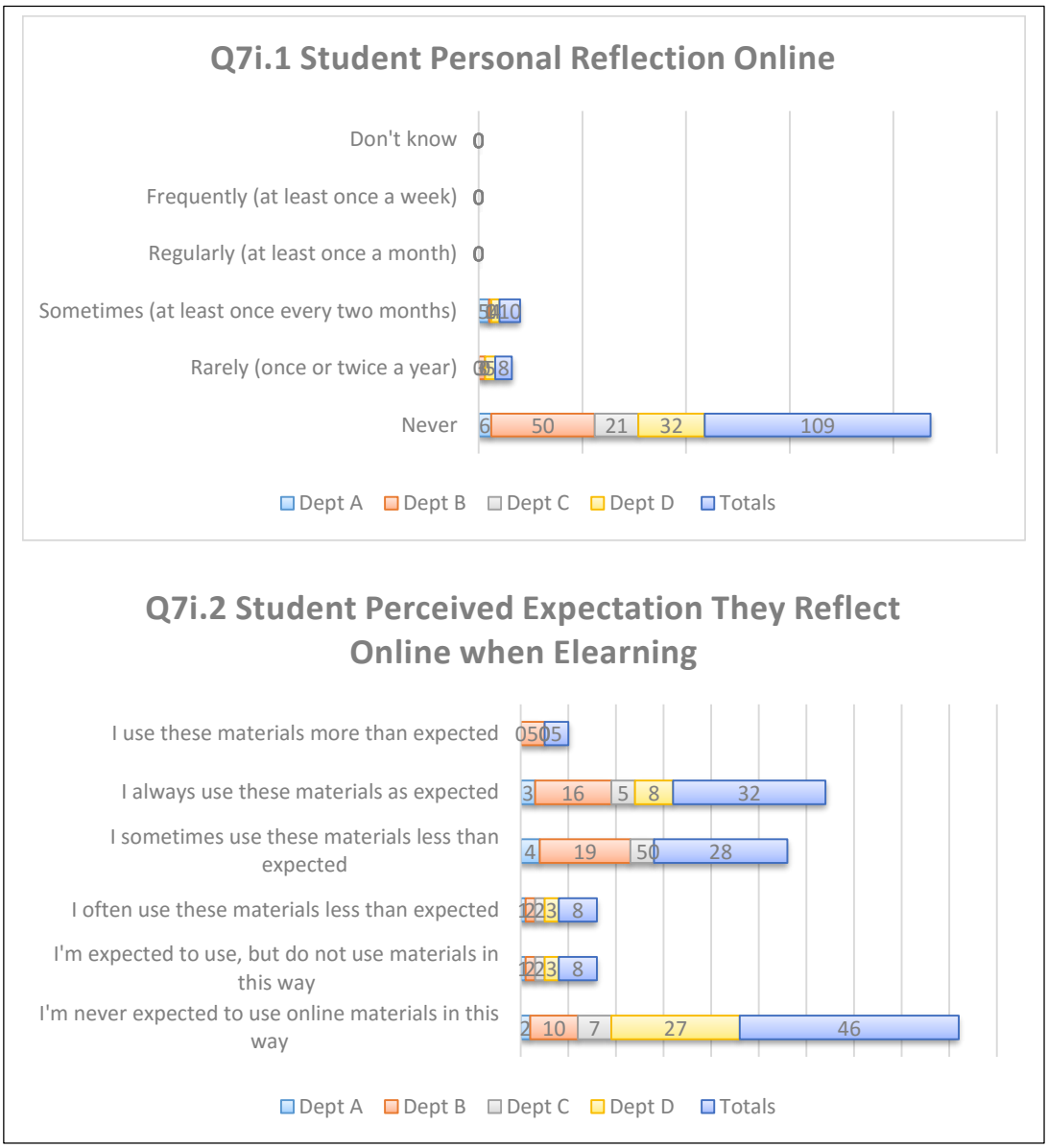


Figure 33: Student Q7i Parts 1 & 2. Personal engagement with online reflective exercises and perceived expectation they engage in the same when e-learning.

Question 7J focused on whether the department educators or students utilised mobile device technology during e-learning engagement. The data confirmed that educator respondents predominantly used internet search functions on a mobile phone in a personal capacity, however the majority did not expect students to do the same when e-learning (Figure 34). This finding was corroborated by the data from the student returns shown in Figure 35. Although the numbers were small, it was interesting to note that department C educators returned the least personal use of mobile devices for searching and was the only department to produce a 100% return as 'Never' expecting students to search for information in this way.

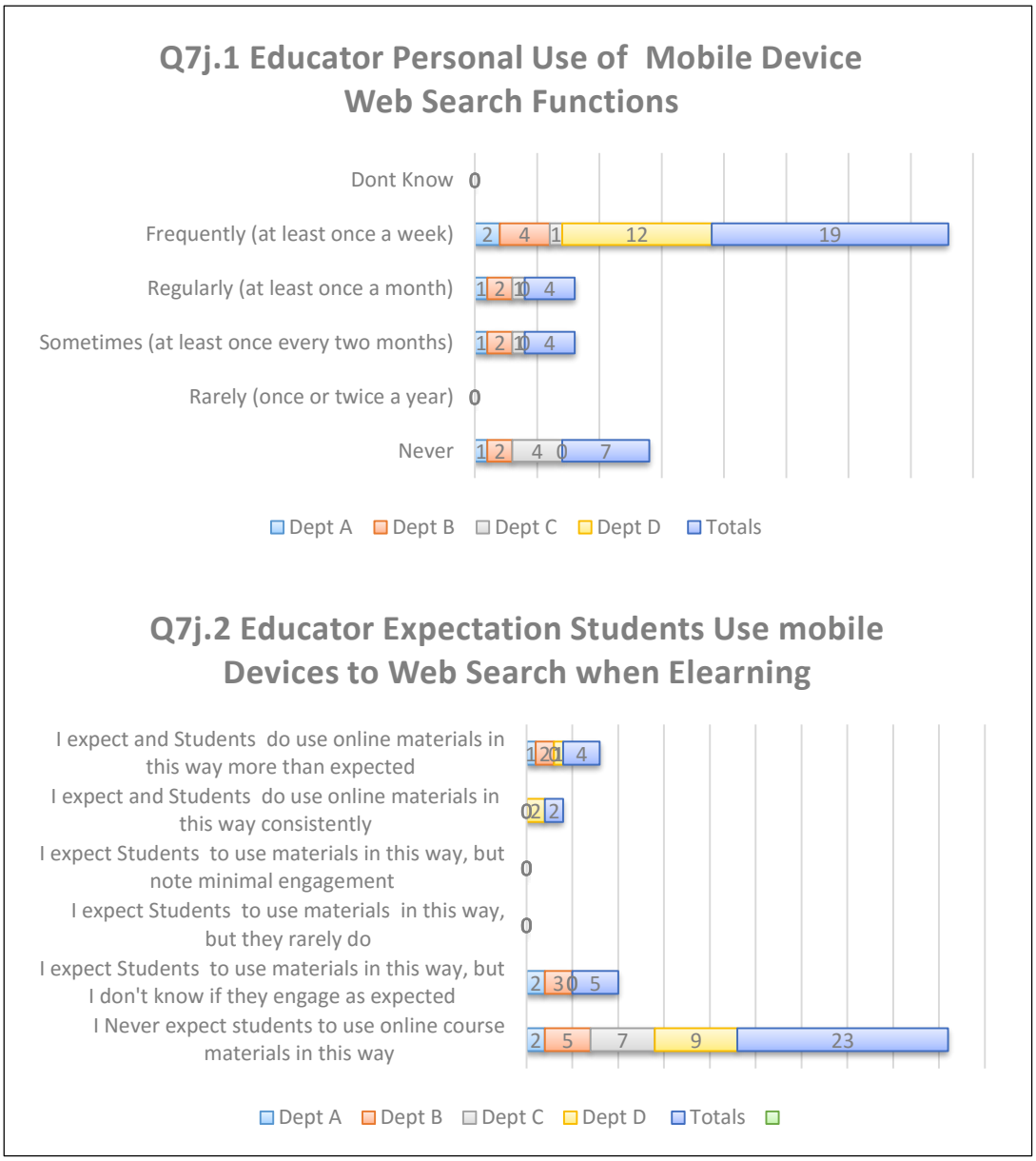


Figure 34: Educator Q7j Part 1 & 2. Personal use of web search functions on a mobile device and expectation students engage in the same activity when e-learning.

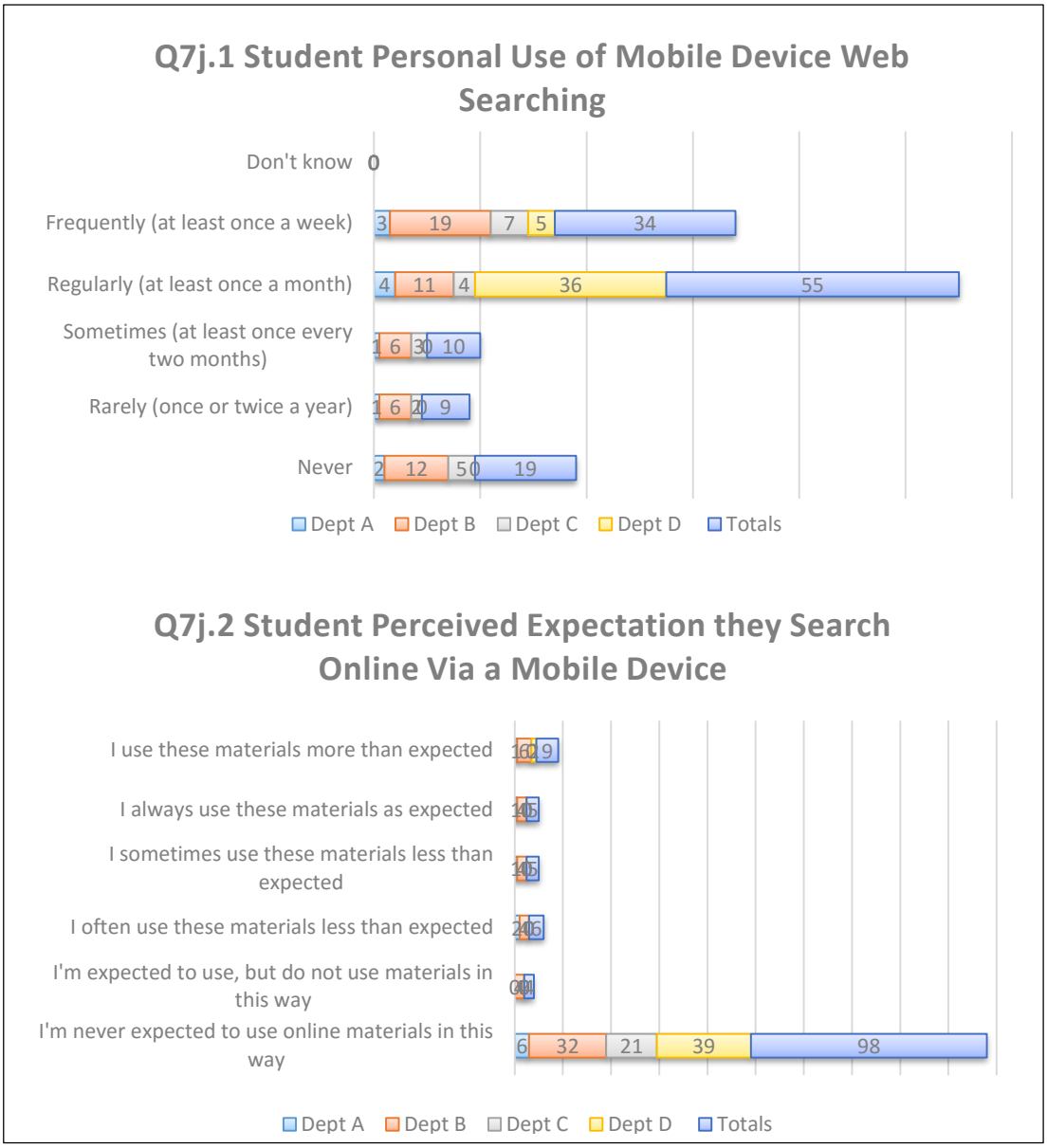


Figure 35: Student Q7J Part 1 & 2. Personal use of web search functions on a mobile device and perceived expectation they engage in the same when e-learning.

The next question focused on the use of synchronous and asynchronous discussion boards (Figure 36), with data confirming a mixed picture of low educator personal use (overall 'never' 29% (n=10); 'rarely' 21% (n=7), 'sometimes' 21% (n=7)), with 'regularly' selected 29% of the time (n=10). Educator data also showed a predominantly low expectation that students use module discussion boards when engaged in e-learning; with departments A and D returning 'never' at 100% and 91% respectively.

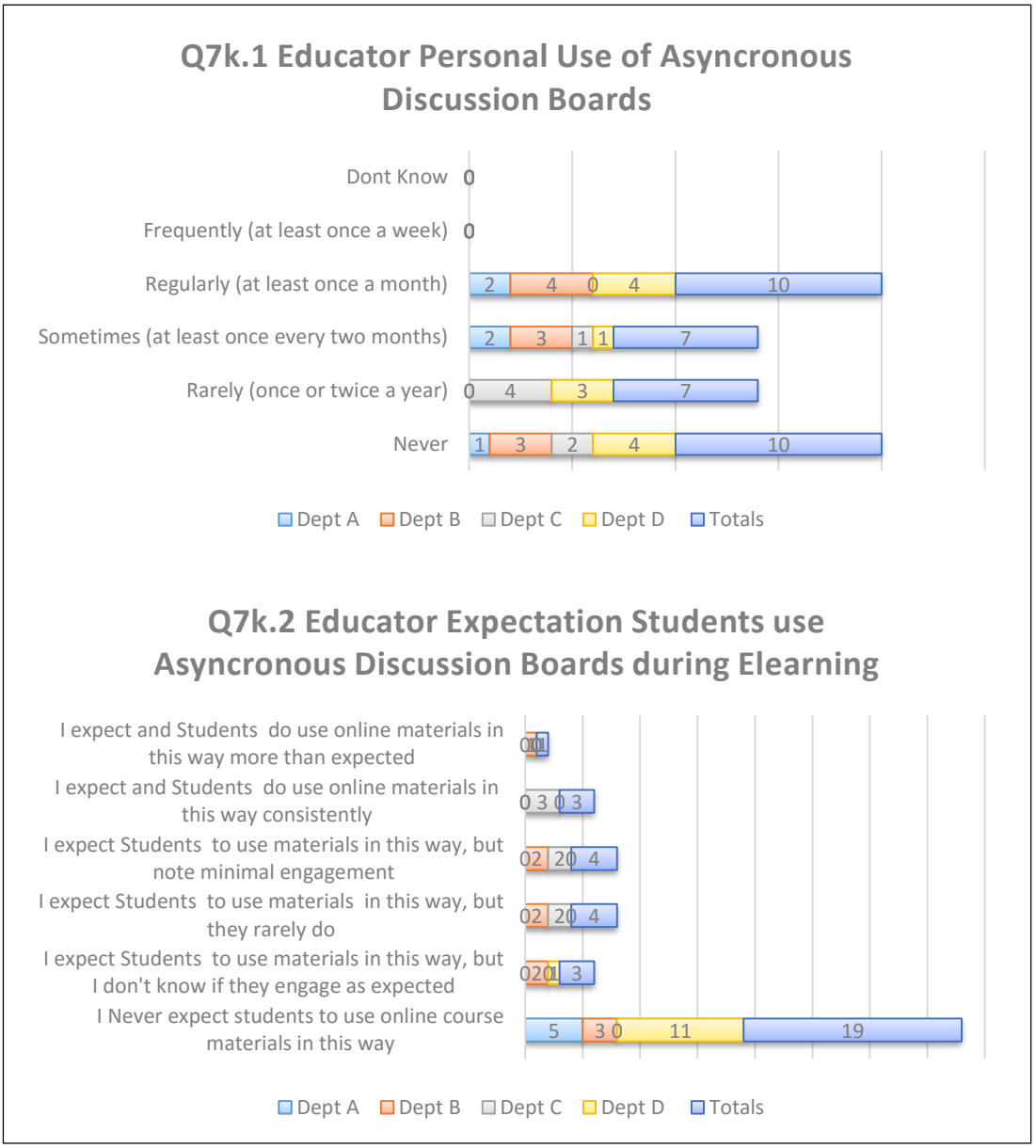


Figure 36: Educator Q7K Parts 1 & 2. Personal use of asynchronous discussion boards and expectation students engage in the same activity when e-learning.

Student data also showed low personal use of asynchronous discussion boards (72% overall, n=92) and overall 56% indicating that they are 'never' expected to use discussion boards when e-learning, and a further 20% (n=25) stating they did not use e-learning in this way when expected to do so (Figure 37).

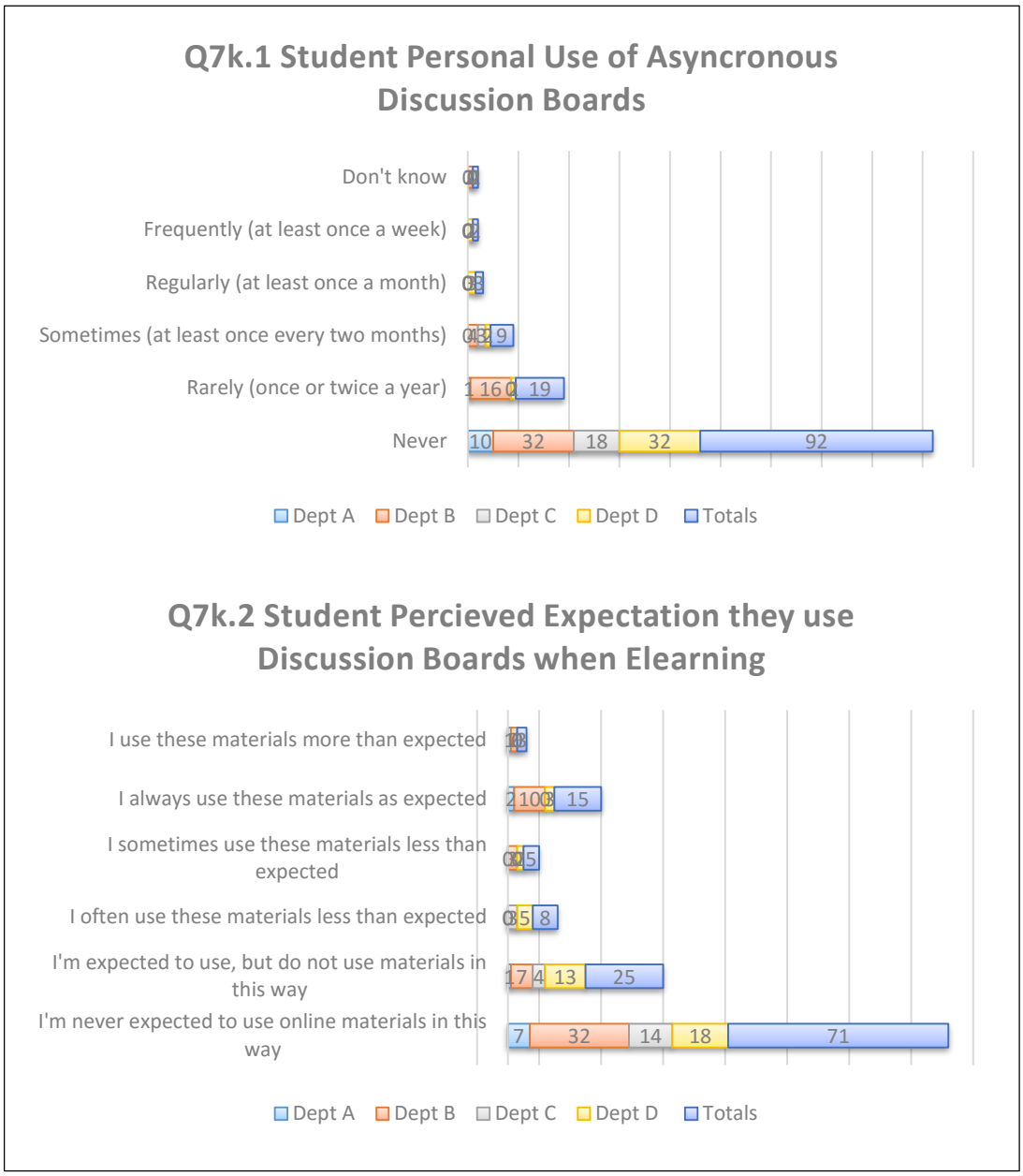


Figure 37: Student Q7K Parts 1 & 2. Personal use of asynchronous discussion boards and expectation they engage in the same activity when e-learning.

The same question was asked of educators and students of synchronous (instant messaging or 'chat room' style) discussion board forums to explore if a more instantaneous means of online communication altered engagement. Figures 38 and 39 show mixed levels of personal participation in synchronous chat rooms by educators, with 82% (n=28) of educators reporting they 'never' expected students to use such a forum when e-learning.

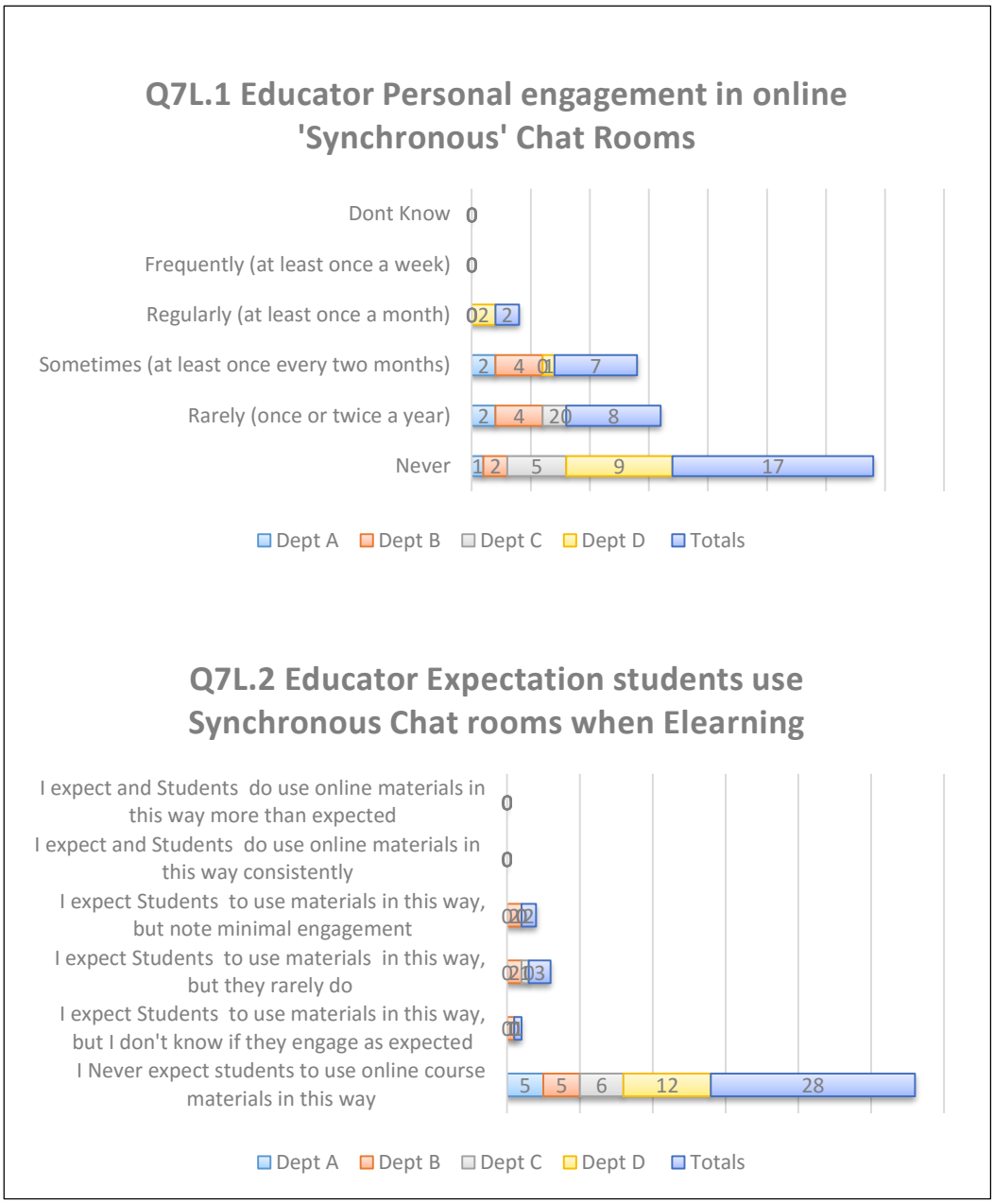


Figure 38: Educator Q7L Parts 1 & 2. Personal use of synchronous chat rooms and expectation students engage in such forums when e-learning.

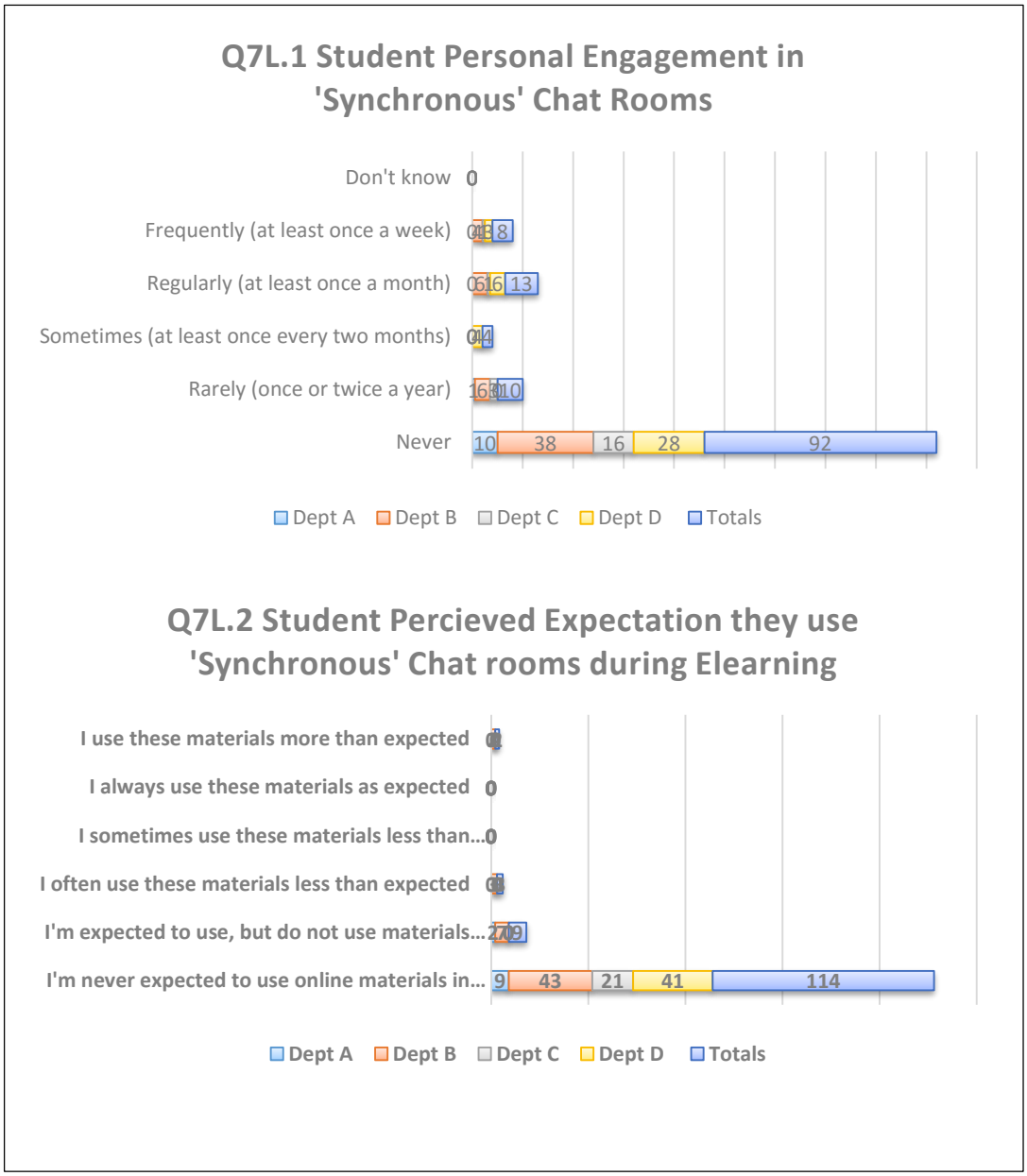


Figure 39: Student Q7L Part 1 & 2. Personal use of synchronous chat rooms and perceived expectation students engage in the same when e-learning.

The final aspect explored in Question 7 related to the frequency of use and expectation of Web 2 technology engagement such as immersive online communities and gaming environments (Benito, Romo, Portillo, Casquero, & Ovelar, 2010). Results are presented in Figures 40 and 41 which showed that with the exception of one educator each within departments A and B, who both returned a 'rarely' response to whether they took part in an online "virtual world" such as Second Life or a gaming community, all other educators replied 'never'. Furthermore 100% (n=34) educators

from across all four departments stated they never expect their students to engage in such activity as part of modular e-learning.

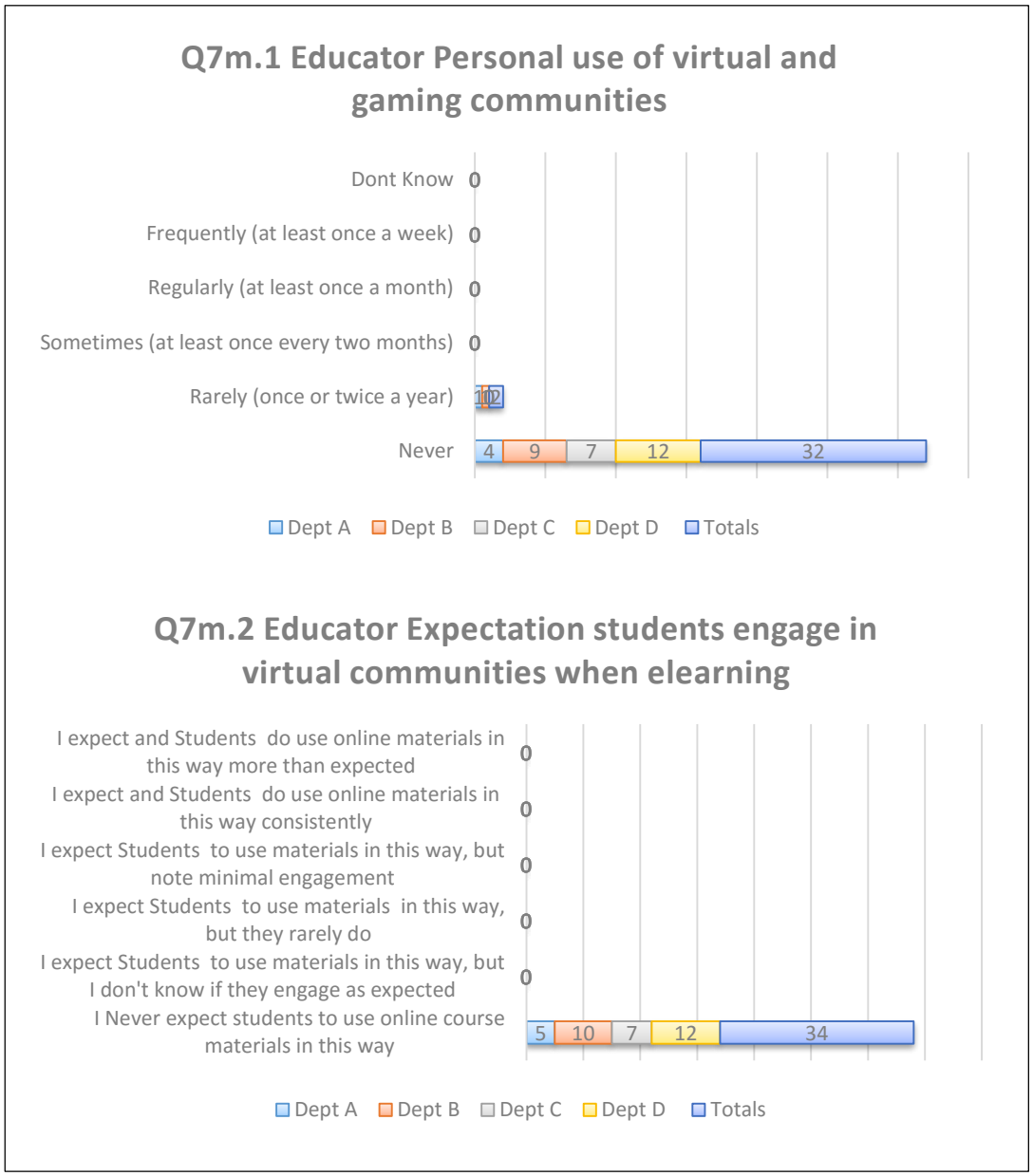


Figure 40: Educator Q7m Parts 1 & 2. Personal use of immersive virtual or gaming community and expectation of students engaging in the same activity when e-learning.

Corresponding student data showed a similarly unambiguous picture whereby few students personally engaged in a virtual world or gaming community.

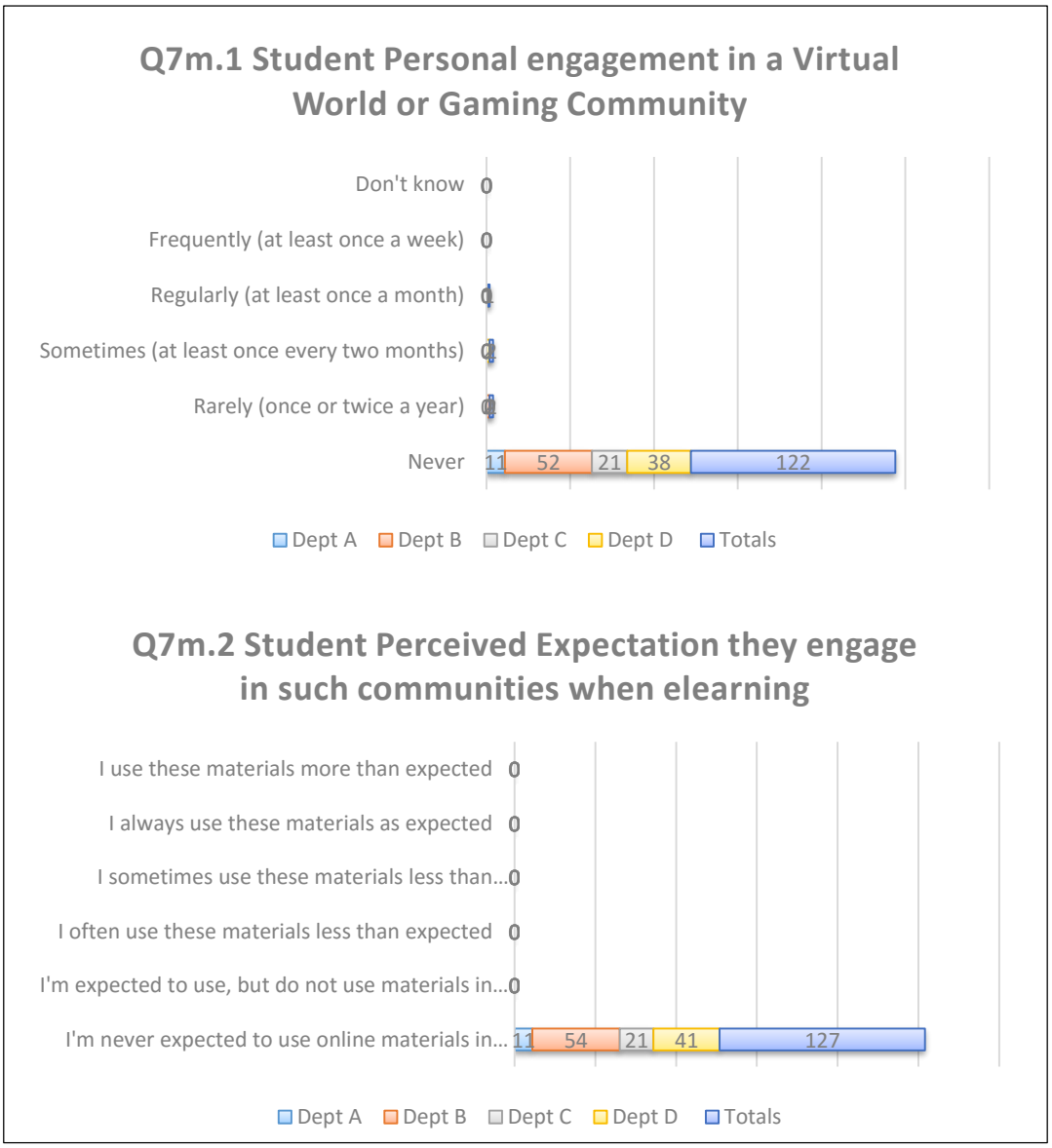


Figure 41: Student Q7m Parts 1 & 2. Personal engagement in online virtual worlds and gaming communities and perceived expectation they engage in the same when e-learning.

Figure 41 also shows that 100% of student respondents selected they were never expected to engage in a virtual online or gaming community as part of their modular e-learning.

4.7.1: Question 7 summary of results

The analysis of results for Q7 was summarised in Table 9 and suggested that for the case study respondents, educator personal use of information technologies and interactive online activities tended to correspond with what functionality they incorporated into e-learning within their modules. This finding was most clearly seen in activities relating to individual information management, as opposed to interactive exercises or group communication. Educator participants frequently accessed the internet from a home study area, search databases via the internet, and watch online video casts and expected students to do the same (albeit with varying degrees of confidence in student engagement).

With the exception of department B, the majority of educators did not personally write to wikis or blogs, nor did they expect their student to do so during e-learning. Educators personally engaged in social media, but did not expected their students to use social media as part of e-learning. Furthermore, educator expectation that students engage in module discussion boards appeared mixed, with 100% of department C educators stating they expected discussion board use whilst the majority of department D educators (92%, n=11) selected they never expected discussion board use from students. Overall department D educators were noted to personally use communication based information technology, yet favoured information management functions over communication approaches when utilising e-learning. This was corroborated by student data, however it was noted that department D students used communication forums such as social media sites above what was expected by their tutors.

Across the departments, for e-activities such as watching video casts, downloading podcasts, and reflective writing exercises; student perception of what was expected of them appeared lower than educator reported expectations. Engagement with functionality such as synchronous chat rooms, immersive virtual simulated worlds, or gaming communities did not appear to be a feature of the vast majority of educator or student e-learning expectation or practice.

Table 9: Analysis summary of question 7

Question Stem	Educator Personal Use	Educator Expectation of Student use when authoring E-learning	Observation	Student Personal Use	Student Perceived Educator Expectation and reported use when E-learning	Observation
7A:Use of Social Media	Mixed responses across Depts.	Predominantly 'Never' expect student use	Low personal use and low expectation in e-learning	Predominantly frequent use	Predominantly Never Expected	Students in Dept. D report use above what is expected
7B: Home internet access	Predominantly Frequent use	100% expected cross all Depts.	Level of personal use corresponds to expectation of student use	Predominantly frequent use	!00% Expected	Some students reported use less than perceived expectation
7C: Watch web based video or live web TV	100% personal use reported	Predominantly expect consistent use	Level of personal use corresponds to expectation of student use	Mixed responses across Depts.	Mixed responses to expectation of use when e-learning	49% overall student report never being expected to use
7D: Video / Photo uploading	Mixed responses across Depts.	Mixed responses across Depts.	100% 'Never' expected in Dept. D, with mixed levels of expectation in others	Mixed responses across Depts.	Predominantly report never being expected to engage	Disparity between educator and student expectation
7E: Use of Wikis and Blogs	Predominantly Never used	Mixed responses across Depts.	92% of Dept., D educators 'Never' expect student use	Predominantly Never	Predominantly Never Expected	Suggestion of student non-compliance when perceived as expected to engage
7F: Online data searching	Predominantly Frequent use	Predominantly expect consistent use	Level of personal use corresponds to expectation of student use	Predominantly frequent use	93% Expected across Depts. with consistent compliance	Low number of Dept., A and C students report no personal engagement
7G: Podcast downloading	Mixed responses across Depts.	Mixed responses across Depts.	Dept. C educators predominantly 'Never' use nor expect students to use	Mixed responses across Depts.	Predominantly Never Expected	departments C and D 100% Never expected to download podcasts

Table 9: Analysis summary of question 7 (Continued)

Question Stem	Educator Personal Use	Educator Expectation of Student use when authoring E-learning	Observation	Student Personal Use	Student Perceived Educator Expectation and reported use when E-learning	Observation
7H: Use of Online Quizzes	Mixed responses across Depts.	Mixed responses across Depts.	Varied levels of confidence in student engagement as expected	Mixed responses across Depts.	Mixed responses across Depts.	Dept. D Students report 100% compliance
7I: Use of online reflective writing	Mixed responses across Depts.	Mixed responses across Depts.	department D predominantly 'never' expecting students to reflect online	Predominantly Never	Mixed expectation response and compliance levels across Depts.	Dept. D Students predominantly report never being required to reflect online
7J: Use of Mobile Device internet Searching	Predominantly Frequent use	Predominantly 'Never' expect student use	Frequent personal use but low expectation that students engage in this activity when e-learning	Predominantly regular or frequent use	Predominantly Never Expected	Overall, 15% of student respondents never search the internet via mobile
7K: Use of asynchronous discussion boards	Mixed responses across Depts.	Mixed responses across Depts.	Overall 56% (n=19) Predominantly' Never' with n=11 being from Dept. D (92% of Dept.) & 100% expectation from Dept. C (n=7)	Predominantly Never	Predominantly Never	Where educator expectation is noted, overall 20% (n=25) of students report they do not engage.
7L: Use of Synchronous online 'Chat' Rooms	Mixed responses across Depts.	Predominantly 'Never' expect student use	Rare or occasional personal educator use noted in each department	Predominantly Never	Predominantly Never	Some reporting of non-engagement where considered as expected

4.8: Q8: Benefits of e-learning

Figure 42 presents the data from Questions 8a. This suggested that although the majority of educators from all four departments reported 'never' (41% overall, n=14) and 'rarely'(29%, n=10) experiencing benefits of reduced travel due to utilisation of e-earning; with the exception of department D, (8 of which selected 'do not know'); a large majority of educators consider the same potential benefit to apply to their students (74%, n=25).

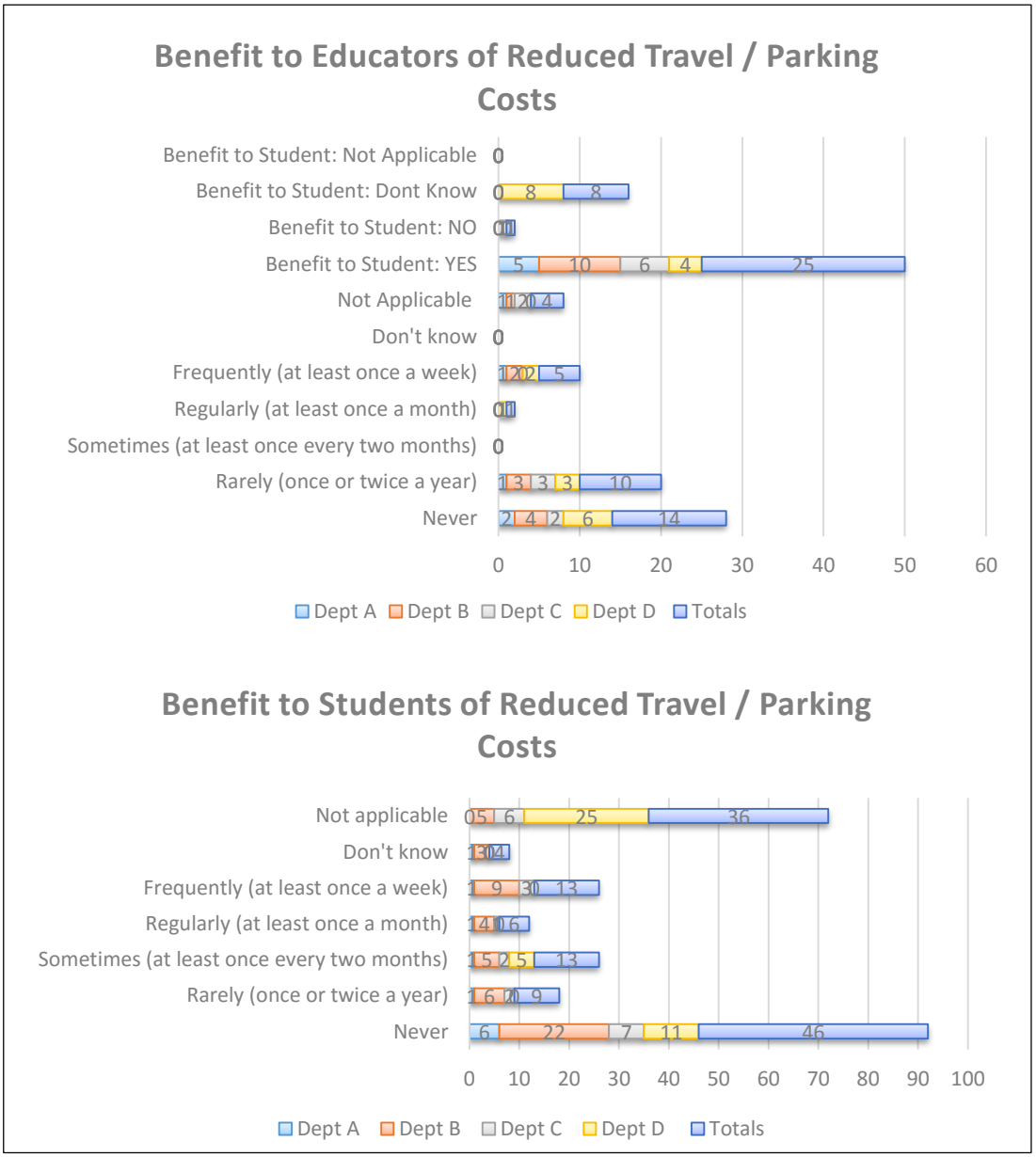


Figure 42: Q8a. Educator and student views on e-learning facilitating reduced travel / parking costs.

In comparison 36% (n=46) of students selected ‘never’ with a further 28% (n=36), selecting not applicable. The remaining 41 student responders (32%) produced a mixed picture on the frequency of the benefit.

Question 8b asked for views on reduced childcare costs and Figure 43 showed the mixed picture from educators, with all respondents from departments A and B and to a lesser extent C, considering reduced childcare costs a potential benefit to their students.

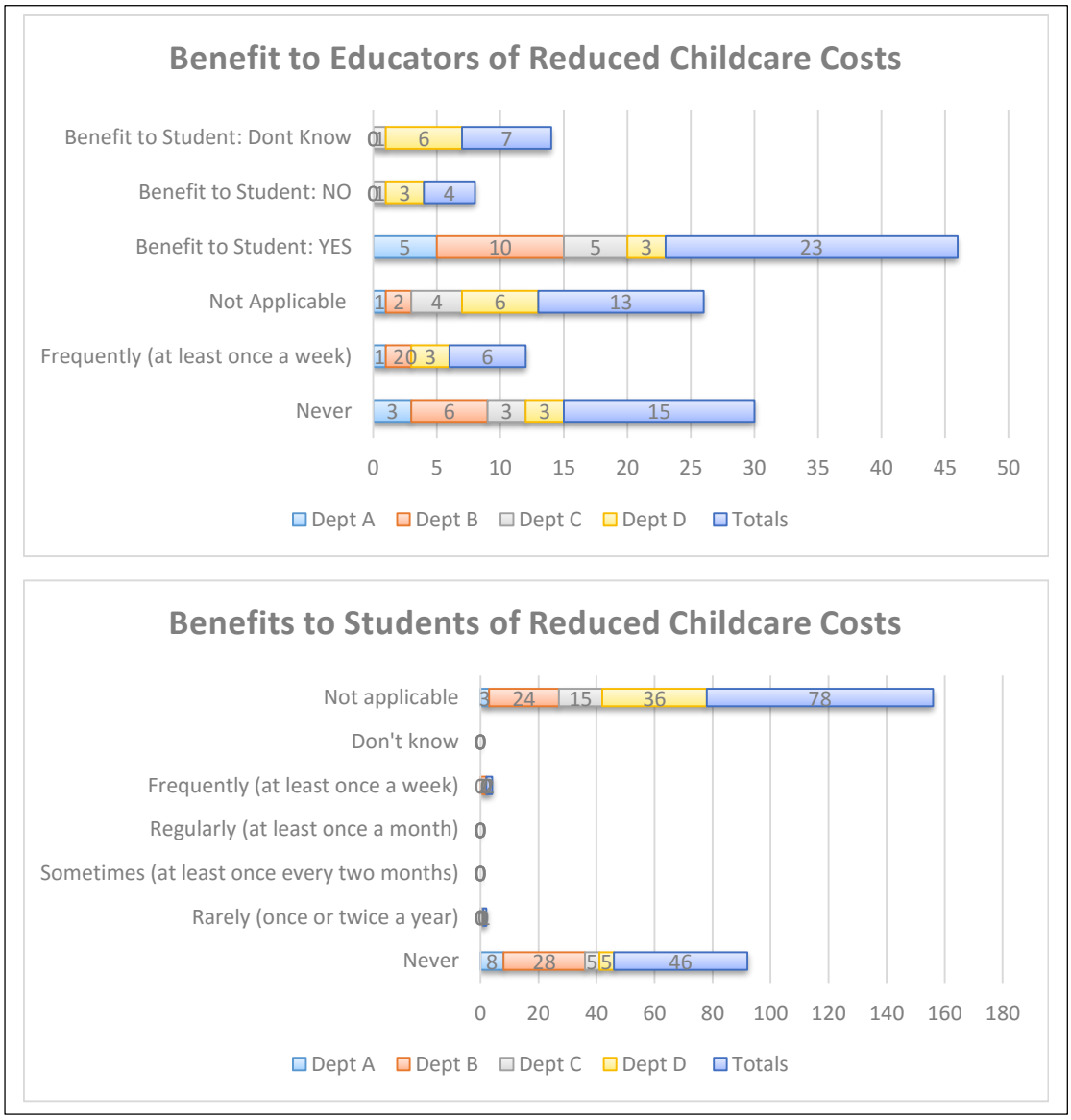


Figure 43: Q8b. Educator and student views on e-learning facilitating reduced personal and student childcare costs

Student results for the same question however suggested a benefit to a relatively small number of respondents. (n=1 ‘rarely’ for Dept. C, and n=2 ‘frequently’ for Dept. B).

Question 8c asked respondents to consider if e-learning helped them to make better use of their time. Educators responded with a mixed picture for themselves, with department D providing the only responses for 'never' (n=2) and proportionately the most responses of any department for 'frequently (58%, n=7).

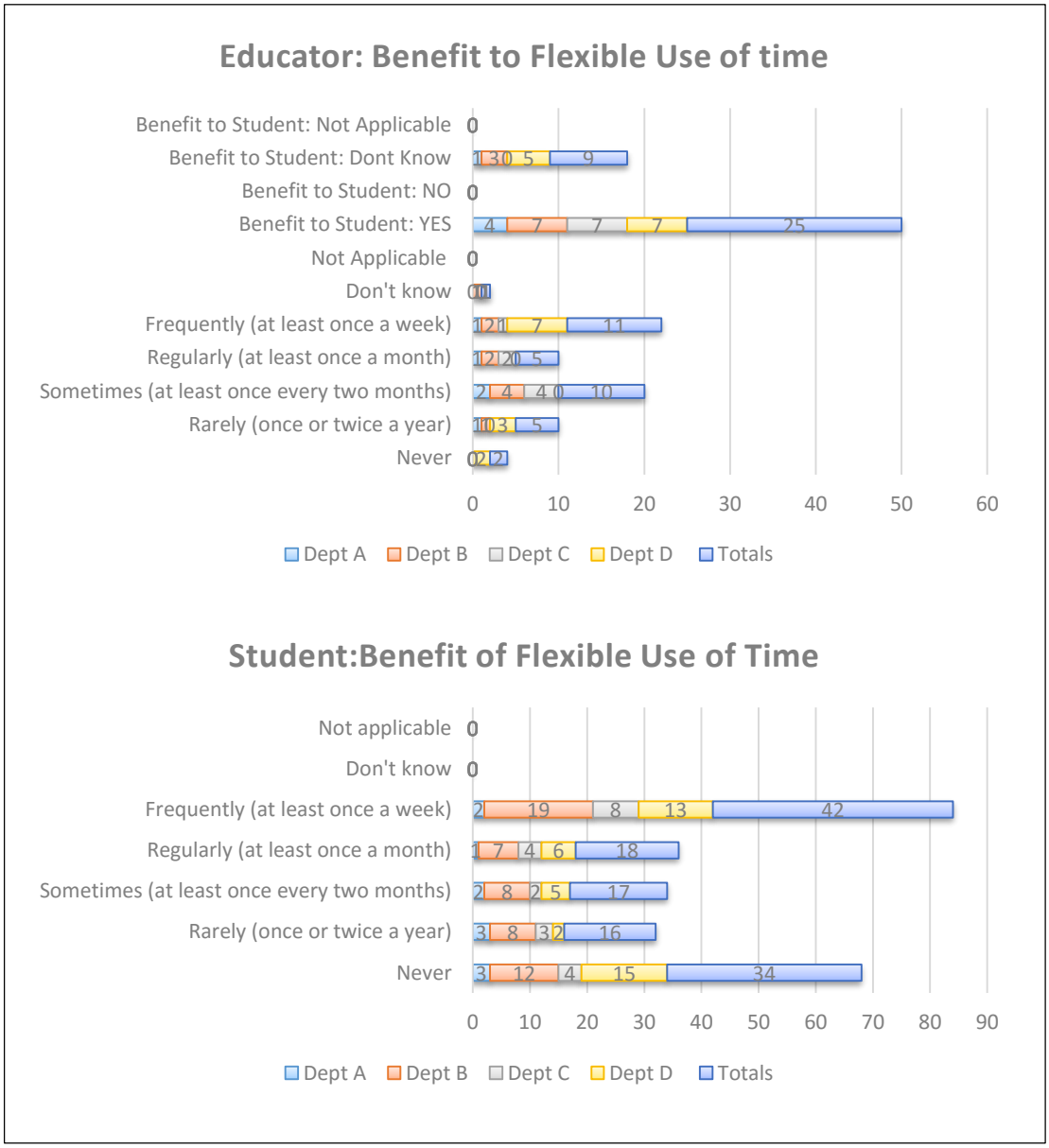


Figure 44: Q8c. Educator and student views on e-learning facilitating flexible use of time.

74% of educators (n=15) considered the same benefit to apply to their students, with the remaining 26% (n=9) selecting 'don't know' compared to a very mixed response from the students themselves. A similar mixed picture regarding whether e-learning

facilitated working flexibly outside the standard university teaching day is presented in Figure 45; with one free text associated comment being:

> *Use of net outside of normal working hours - for me, it doesn't mean I work flexibly, it means I work more.* (Dept. D, Educator 1)

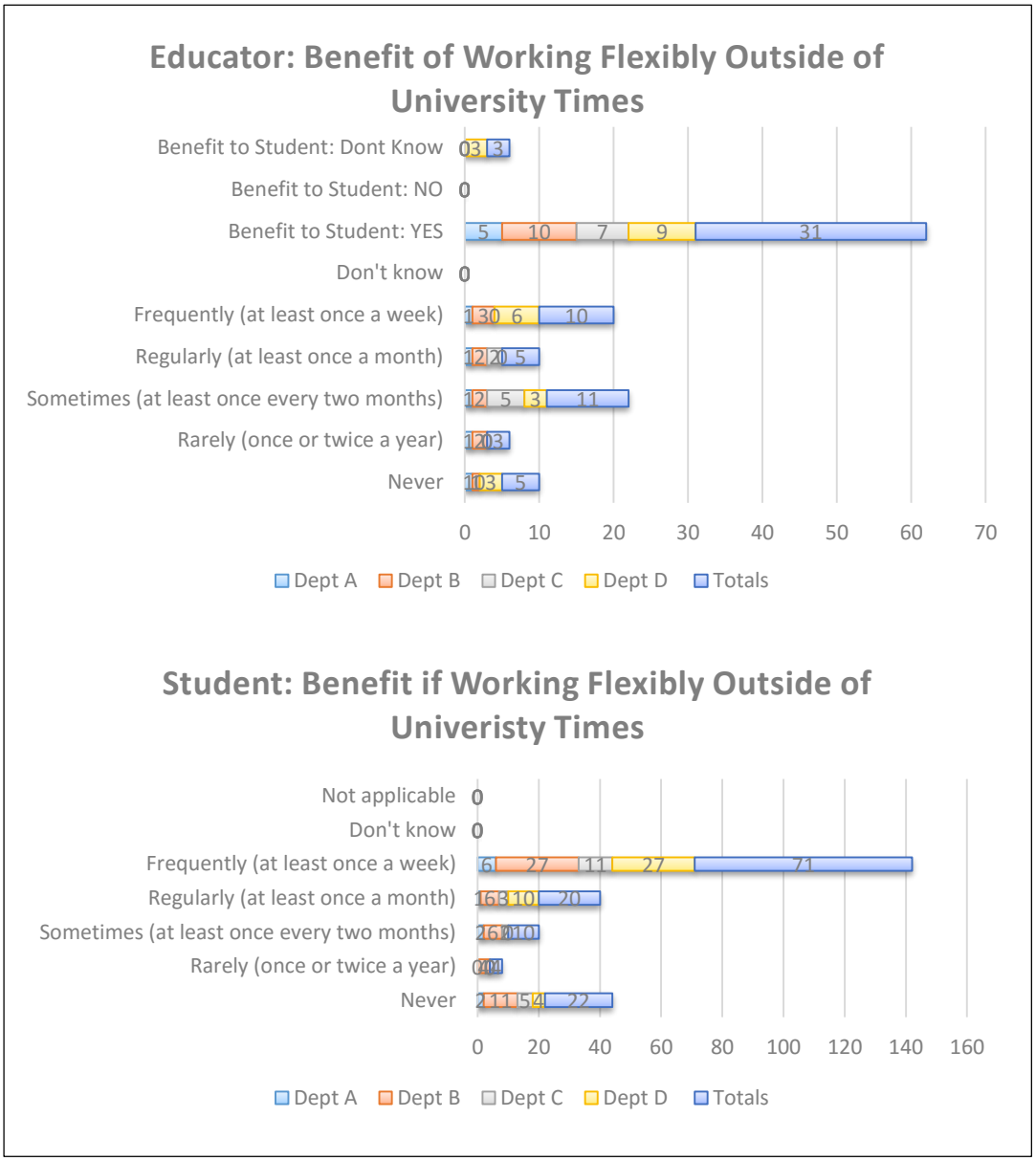


Figure 45: Q8d. Educator and student views on e-learning facilitating working flexibly outside of a standard university teaching day

Educators responded more positively when considering the potential for students working flexibly. Respondents from Departments, A, B and C unanimously selected that e-learning facilitated flexible working outside of a university day for students.

Q8E asked for views on whether engaging in e-learning provided easier access to teaching and learning materials with the results presented in Figure 46.

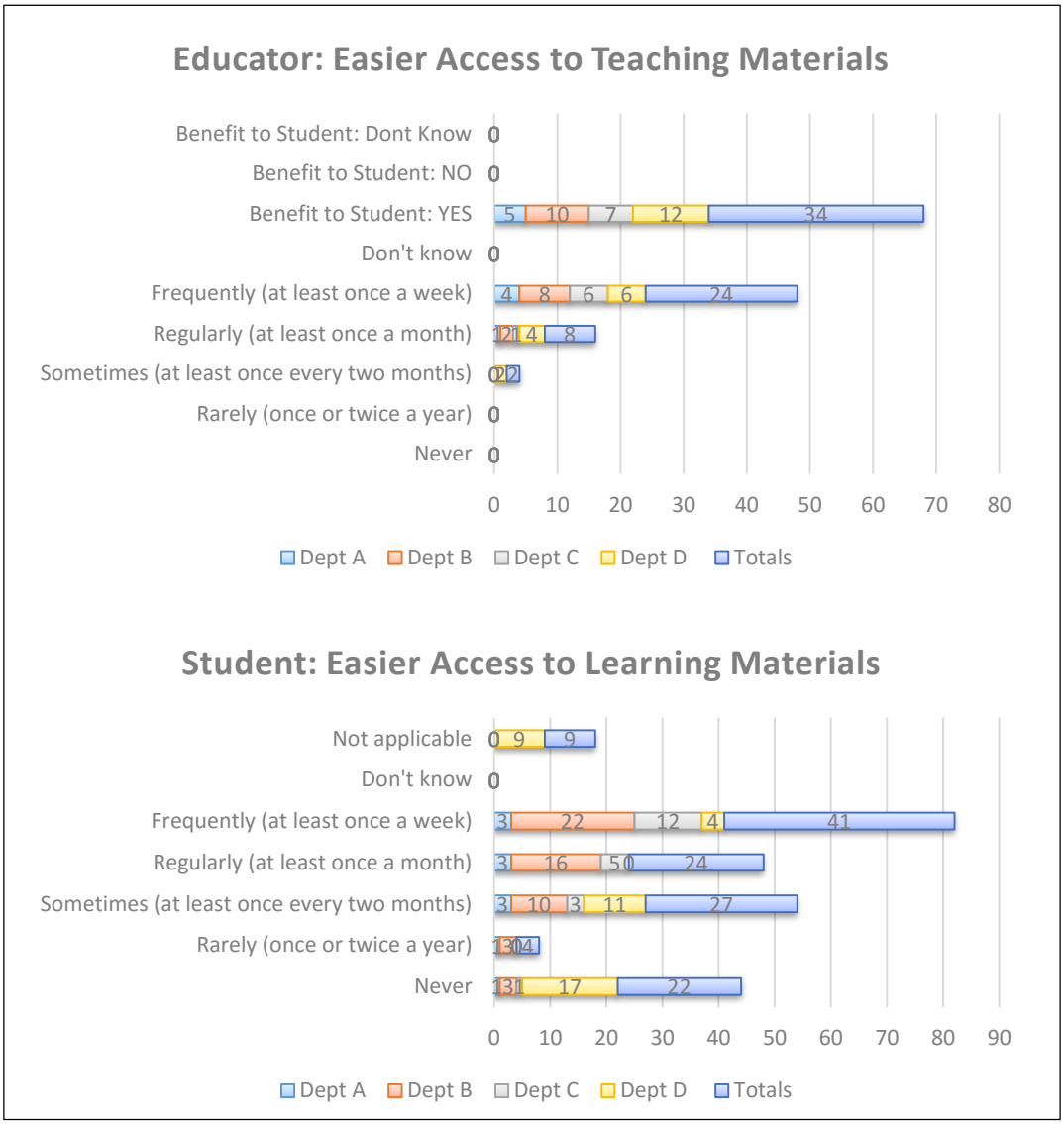


Figure 46: Q8E. Educator & student views on e-learning facilitating easier access to teaching & learning materials

All educator respondents selected this potential benefit existed for themselves and their students, with the majority selecting 'frequently' (n=24, 71%); whilst students presented a more mixed picture.

When considering Question 8f relating to the e-learning contribution to a reduction in the cost of teaching and learning materials, and 8G and 8H asked if e-learning contributed to faster and deeper feedback respectively; an inconclusive picture was seen in both educator and student responses (Charts available on accompanying CD).

With regard to Question 8i and whether e-learning promoted the sharing of learning resources, Figure 47 showed educators predominantly selecting that the benefit existed for their students (n=29, 85% overall) but indicated mixed views on this benefit for themselves. Student responses however, also appeared divided, with 50.3% (n=64) selecting ‘never’ or ‘rarely’ with the remaining 49.7% of responses (n=63) clustering on ‘regularly’ (n=41, 32% overall).

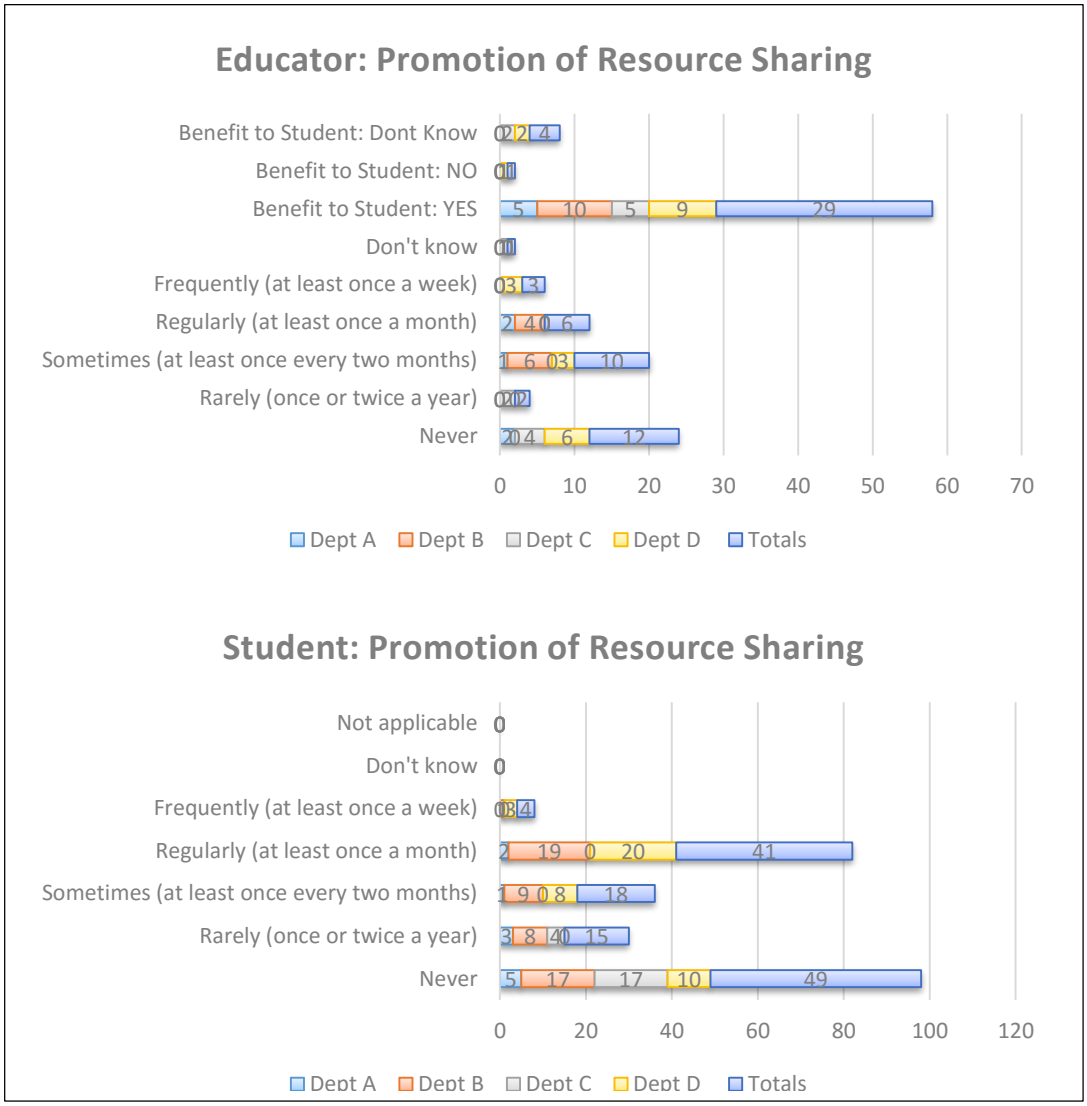


Figure 47: Q8i. Educator & student views on e-learning promoting the sharing of resources.

Question 8J asked educators and students if they had experienced the benefit of receiving expressions of support and encouragement from peers via discussion boards. The data within Figure 48 indicated that the majority of educators reported ‘never’ or ‘rarely’, however departments A and B educator respondents unanimously

considered this a benefit for students, with departments C and D presenting a mixed picture.

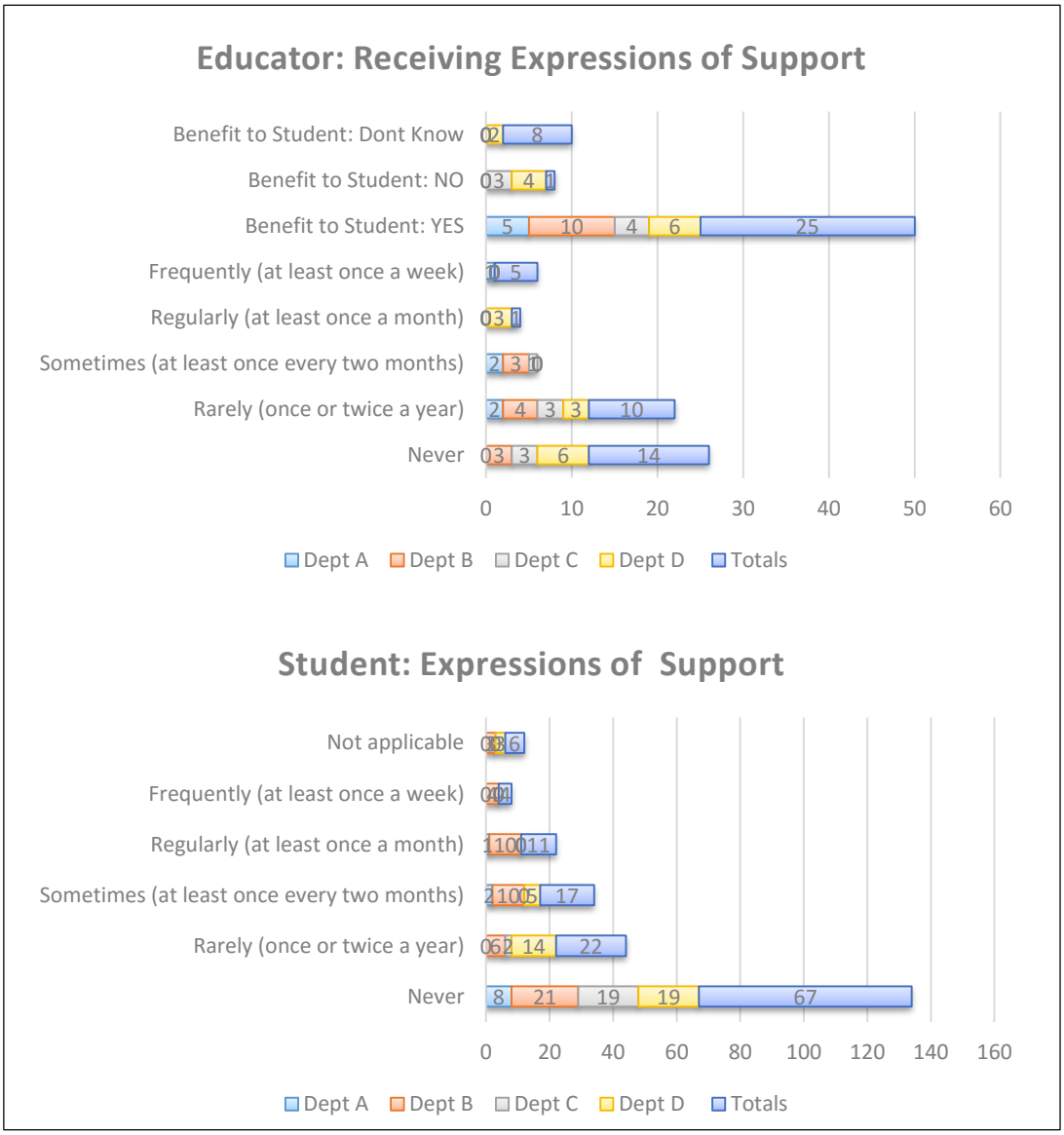


Figure 48: Q8J. Educator & student views on e-learning promoting expressions of support via online discussion boards.

Student responses also appeared mixed, particularly within departments A and B, with 70% (n=89) selecting ‘never’ or ‘rarely’, as did all students from department C.

The potential benefit of being facilitated to critique the work of others online was explored in Question 8k and presented in Figure 49. Views of educators from all four departments were spread across the range of possible responses, whilst 77% of student respondents selected ‘Never’ being facilitated in developing a willingness to critique the work of others. This again include 100% of department C student respondents,

suggesting further exploration of department C discussion board use later in the study would prove enlightening (See data set two).

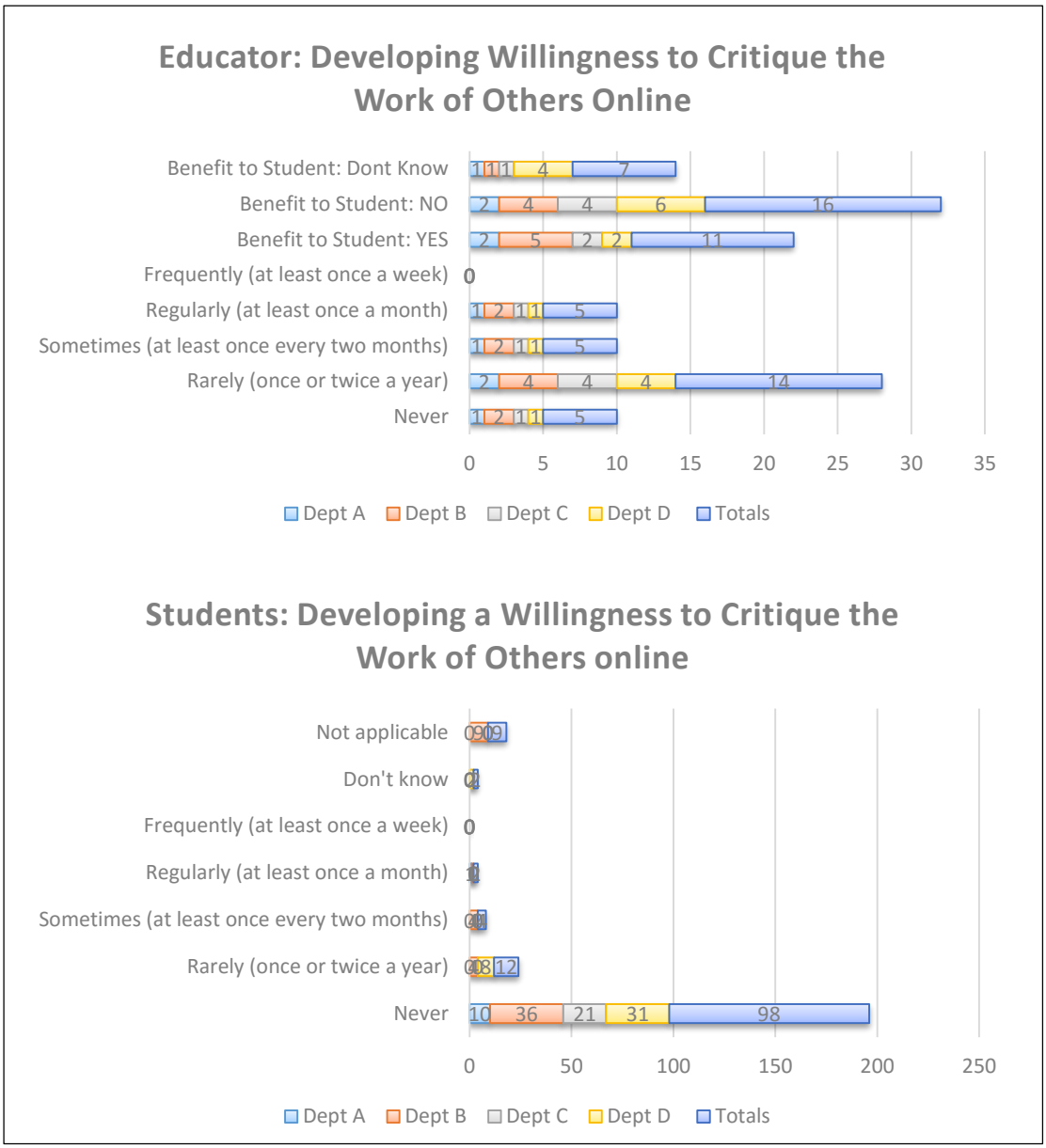


Figure 49: Q8K. Educators & students developing a willingness to critique the work of others online.

When asked whether e-learning was found to be fun, educators and student opinion within and across departments appeared to be divided, with educators presenting a very mixed picture for themselves, and for whether they felt students found e-learning fun.

Student responses to the same question were also varied, with 58% overall (n=74) selecting they found e-learning fun to some degree, with the proportionately largest number of selections being for 'sometimes' (n=30). 42% (n=53) however, selected

'never' finding e-learning to be fun. The greatest department number within this subset were from department B at n=31, or 57% of department B student responders.

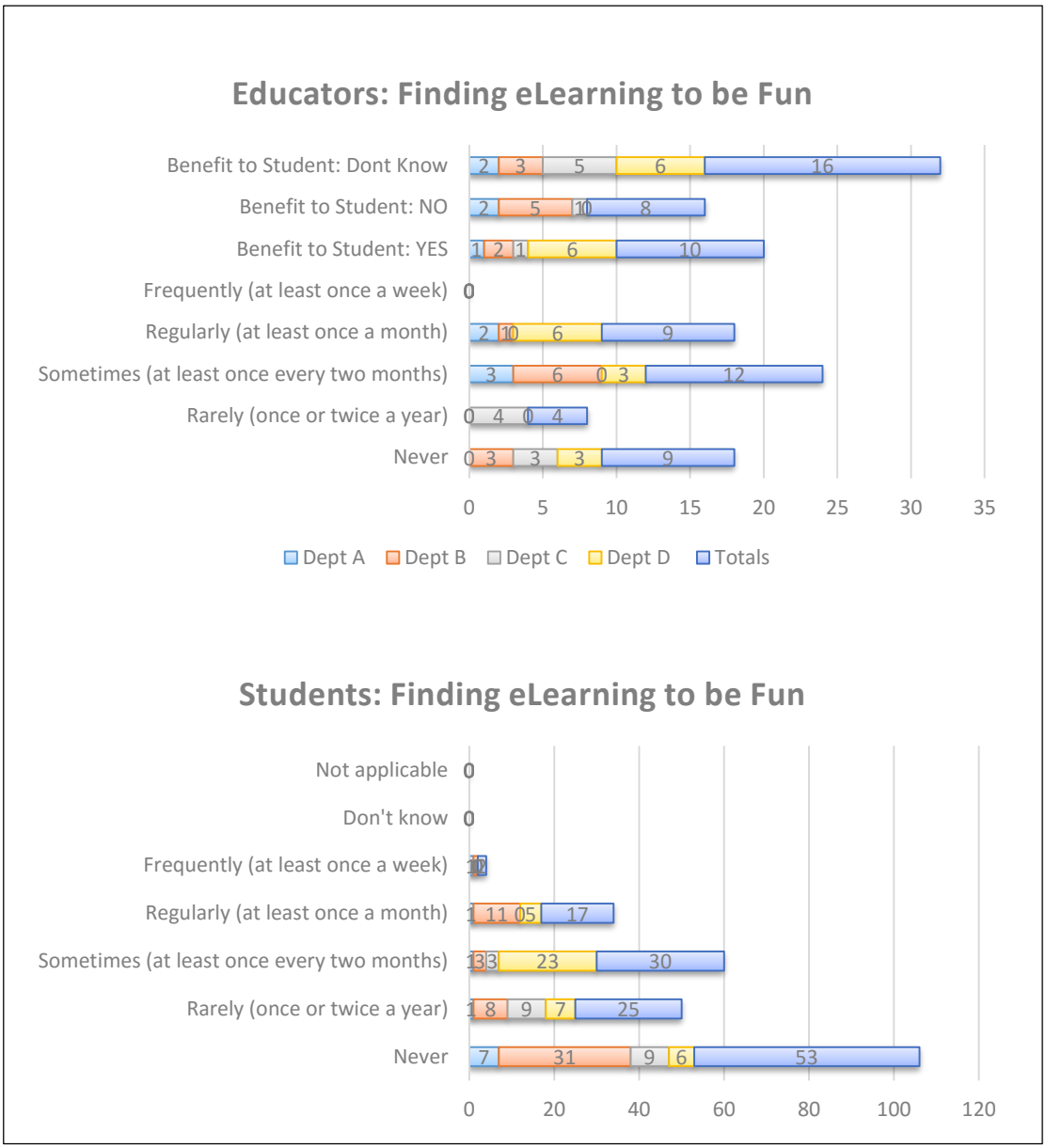


Figure 50: Q8l. Educators and students finding e-learning to be fun.

Proportionately few educators felt e-learning improved their own motivation to study when responding to Question 8m (74% selecting 'never'); whilst students presented a more diverse picture with 50% overall stating 'never' (n=63) and the remaining responses decreasing in number by frequency overall.

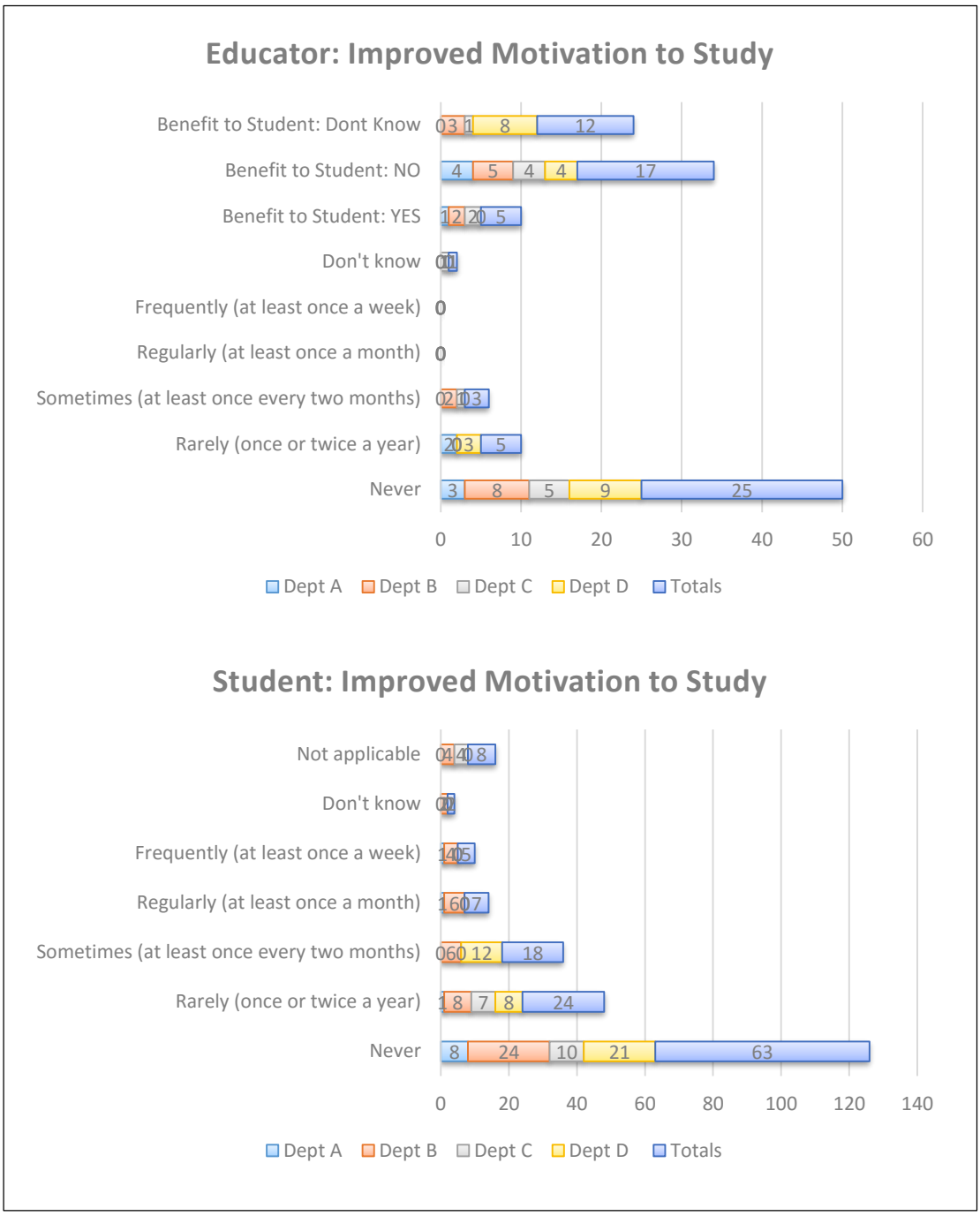


Figure 51: Q8m. Educator & student views on e-learning improving motivation.

Responses to question 8n in Figure 52 suggested that the majority of educators from across all four sites considered engaging in e-learning to benefit their IT skills to varying degrees (79%, n=27), with the majority from all departments also considering it to benefit their student's I.T. skills (n=26, 76% selecting 'yes').

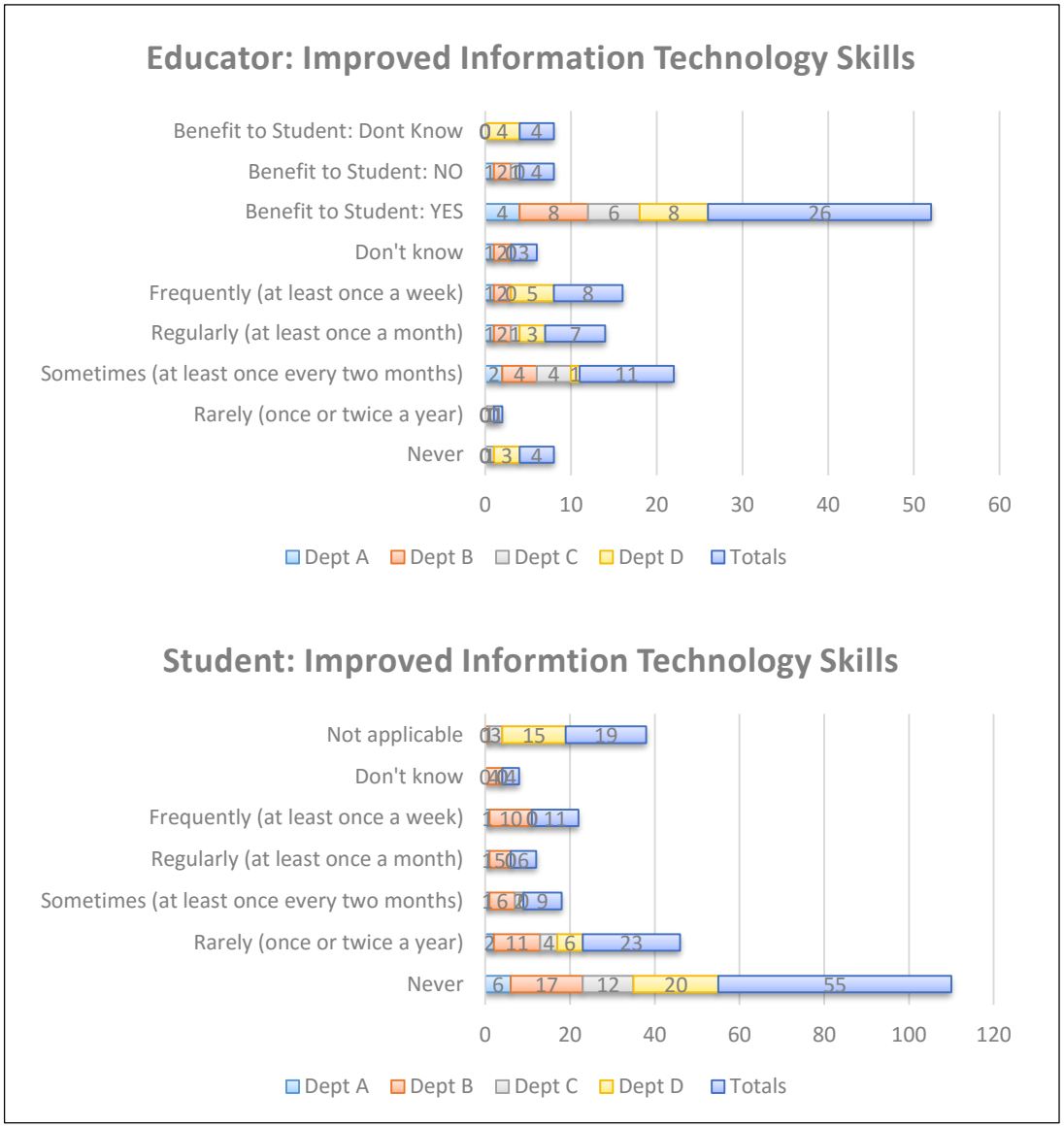


Figure 52: Q8N. Educator & student views on e-learning improving information technology skills.

By comparison, the majority of students selected e-learning 'never' (n=55, 43% overall) or 'rarely' (n=23, 18% overall) improved their I.T skills. A further 19 students selected 'not applicable' and this may have been due to students considering their I.T skills already proficient, with the result produced by what might have proved an ambiguous question for some respondents.

The final component of Question 8 related to the potential e-learning benefit from participants taking charge of their own learning. Figure 53 presents the responses that

suggested educators benefitted in this way personally (53% (n=18) selecting 'regularly'). This response set included all department C educators.

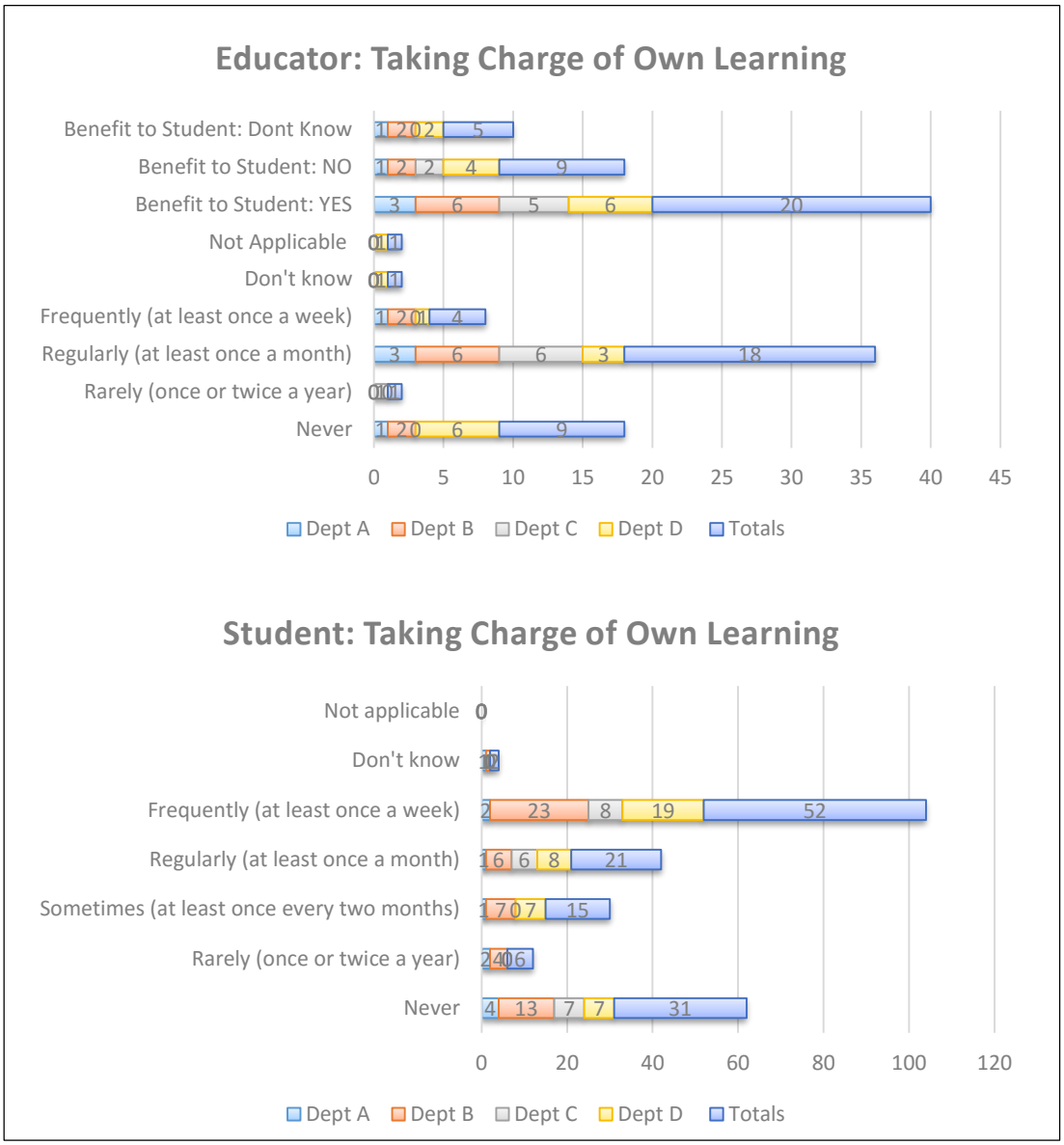


Figure 53: Q8O. Educator & student views on e-learning benefiting taking charge of own learning

Regarding educator views on students taking charge of their own learning through e-learning, Figure 53 results suggested a mixed picture leaning toward the yes responses. Student responses across the departments varied with the majority selecting they experienced the benefit (largest answer set being 51% (n=52) selecting 'frequently', with 17% (n=21) selecting 'regularly', and a further 12% overall (n=15) choosing 'sometimes'. Of the remaining students, 24% (n=31) selected 'never', with 6 students (5% of overall numbers) selecting 'rarely'.

4.8.1: Question Eight summary of results

Question 8 explored if benefits from e-learning noted within academic literature existed within the case university. Many, but not all, of the potential benefits widely thought to be deliverable through e-learning appeared to be present to varying degrees across all case departments. A summary of the results can be seen in Table 10. An analysis of the most frequent responses to each question stem suggested that educators and students concurred on the existence of some benefit, namely better use of time (for students), ease of access to learning materials, flexibility of when to work, and the ability to control one's own learning. The data also presented an unclear picture of whether suggested benefits such as reduced costs of learning materials; faster student feedback, and whether participants found e-learning to be fun existed within or across the departments studied, suggesting areas for further enquiry as the case study progressed.

Educator and student responses to Question 8 also suggested potential differences of opinion as to the degree of benefit derived by students from reduced traveling and child care costs, and receiving messages of support from peers online. The data suggested that some educators may have overestimated these benefits for students, along with the degree to which engagement in the e-learning improved a student's existing information technology skills. Finally, the data highlighted potential benefits noted in the literature which did not or rarely appeared to exist within the case university, such as developing a willingness to evaluate the work of others online and improving motivation to study.

Table 10: Summary of benefits present within the case university during e-learning

Potential benefit	Identified as personally present for educators?	Considered as benefitting students by educators?	Identified as present by students?	Comment
a. Reduced travel / parking costs	Mainly No, or Rarely	Mainly YES	Mainly Never, or Not Applicable	Possible educator overestimation of benefit to Students
b. Reduced childcare costs	Mainly NO, or N/A	Mainly YES	Mainly Never, or Not Applicable	Possible educator overestimation of benefit to Students
c. Better use of time	Mainly YES,	Mainly YES, (Some Don't know)	Mainly Yes, minority Never	Educator and student views similar
d. Ability to work flexibly, outside of university day/week	Mainly YES	Mainly YES	Mainly Yes, minority Never	Educator and student views similar
e. Easier access to learning / teaching materials	Unanimously YES	Unanimously YES	Mainly Yes, minority Never	Possible Issue with some Student online access?
f. Reduced cost of learning materials	Mixed results	Mixed results	Mixed results	Proportionately more benefit reported than not
g. Faster assessment feedback	Mixed results	Mixed results	Mixed results	Proportionately less benefit reported
h. Facilitating Greater Depth of Feedback.	Mainly NO	Slight greater NO than YES	Mainly YES, but mixed	Students may value this benefit more than educator
1. Promotes sharing of resources among peers	Mixed results	Mainly YES	Divided between Yes and Never	Dept. B and D appear to benefit most regularly from this issue
j. Receiving expressions of support from peers online	Mainly No, some 'Rarely'	Mainly YES	Mainly 'Never'	Possible educator overestimation of benefit to Students.
k. Developing a willingness to evaluate the work of others online	Mainly 'Rarely'	Mixed response with 21% (n=7) 'Don't Know'	Mainly 'Never'	Benefit appears to exist only rarely for each group
l. Finding e-learning engagement to be fun	Mixed results	Mixed results	Mixed results	47% of educators selected 'Don't Know' regarding their students
m. Improved motivation to study	Mainly 'Never'	Mainly No	Mainly 'Never'	Educator and Student views similar
n. Improved information technology skills	Mainly 'Sometimes'	Mainly YES	Mainly Never, some 'Not Applicable'	Possible educator overestimation of benefit to Students.
o. The ability to take charge of your own learning	Mainly 'Regularly'	Mainly YES,	Mainly 'Frequently'	Educator and Student views similar

4.9: Question 9: Challenges from e-learning.

To aid comparison of findings for educator and student respondents, Figures 54 to 65 show educator personal responses alongside educator corresponding views on their students' experiences, followed by student views on the same subject. Additionally, where the 'don't know' category acquired no responses across all departments, the column space has been removed from educator data presentation to aid chart formatting and clarity.

Figure 54 for Q9A regarding insufficient computer literacy indicates a mixed picture with the majority of educators personally experiencing challenges to their computer skills 'rarely' (n=13 overall) or 'sometimes' (n=13 overall), with educators from departments A and B selecting 'most times' (n=1 and 2 respectively) The majority of department D respondents (n=9, 75%) indicated they considered insufficient computer literacy skills to affect a small number of students, with mixed views from the other three departments. Corresponding student results showed 64% of overall responders (n=81) selected they 'never' experienced an inability to engage in e-learning due to insufficient computer literacy.

These results included 80% of department D student responders (n=32) and were in keeping with the result from Question 8n that the majority of students felt e-learning does not facilitate improved information technology skills. The remaining student responses showed a spread of results across the three choices of 'rarely' (n=15), 'sometimes' (n=16) and 'most times' (n=13).

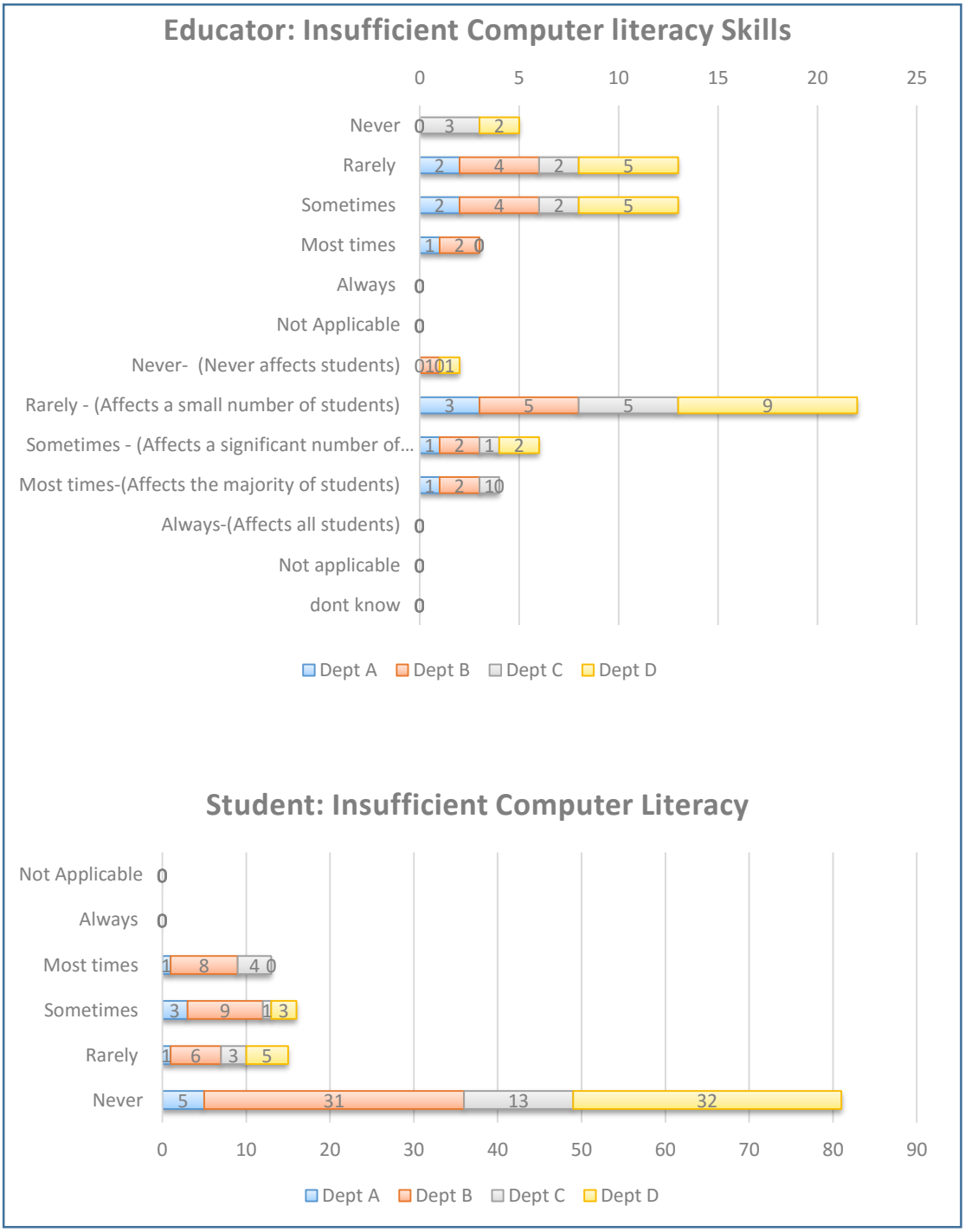


Figure 54: Q9a. Educator and student responses regarding inability to engage in e-learning as expected due to insufficient computer literacy skills

Question 9b results in Figure 55 showed a substantial number of educators who had to compete at home for computer access with their family, (n=19, 56% selected 'sometimes, including 9 educators (90%) from department B respondents). Student respondents appeared to fair slightly better than their educators with an overall 71% 'never' having to compete (n=88); however 28% of students did have to compete to

varying degrees (n=35), with departments A and B appearing proportionately the most affected student groups (n=6, 60% for department A and n=24, 44% overall for department B).

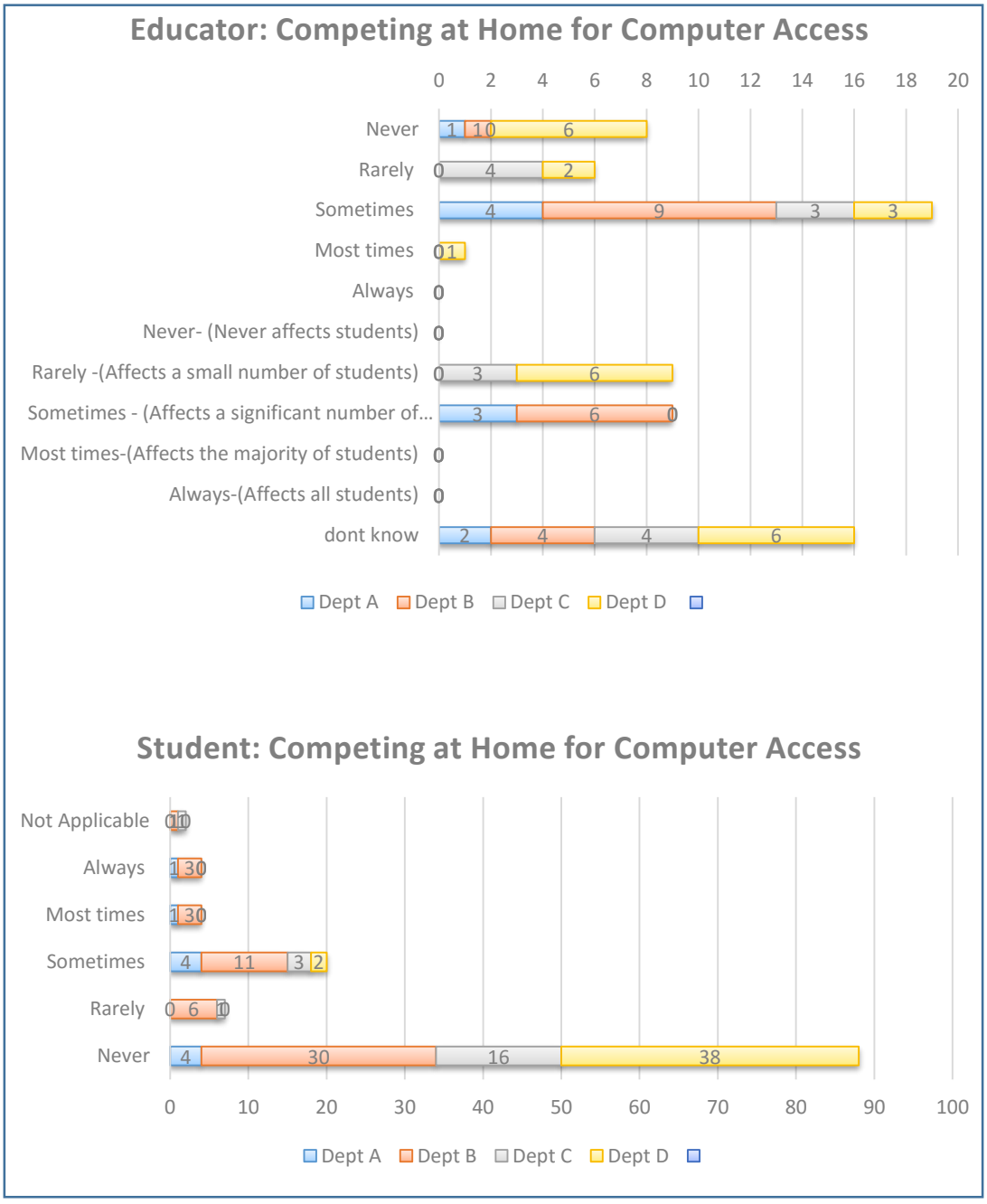


Figure 55: Q9B. Educator & student responses regarding having to compete for computer access at home.

Question 9C asked if respondents felt isolated from students when e-learning. Figure 56 showed educator respondents were divided in their views (n=11, 'never', 32% overall) in comparison to n=14 for 'sometimes' at 41%, with department B comprising 9 of those selections (90% of department B responders). Although all departments

agreed such feelings of isolation affected students, educators differed in their estimation of how often students felt isolated from each other. Student respondents present an equally varying picture of feeling isolated from peers when e-learning.

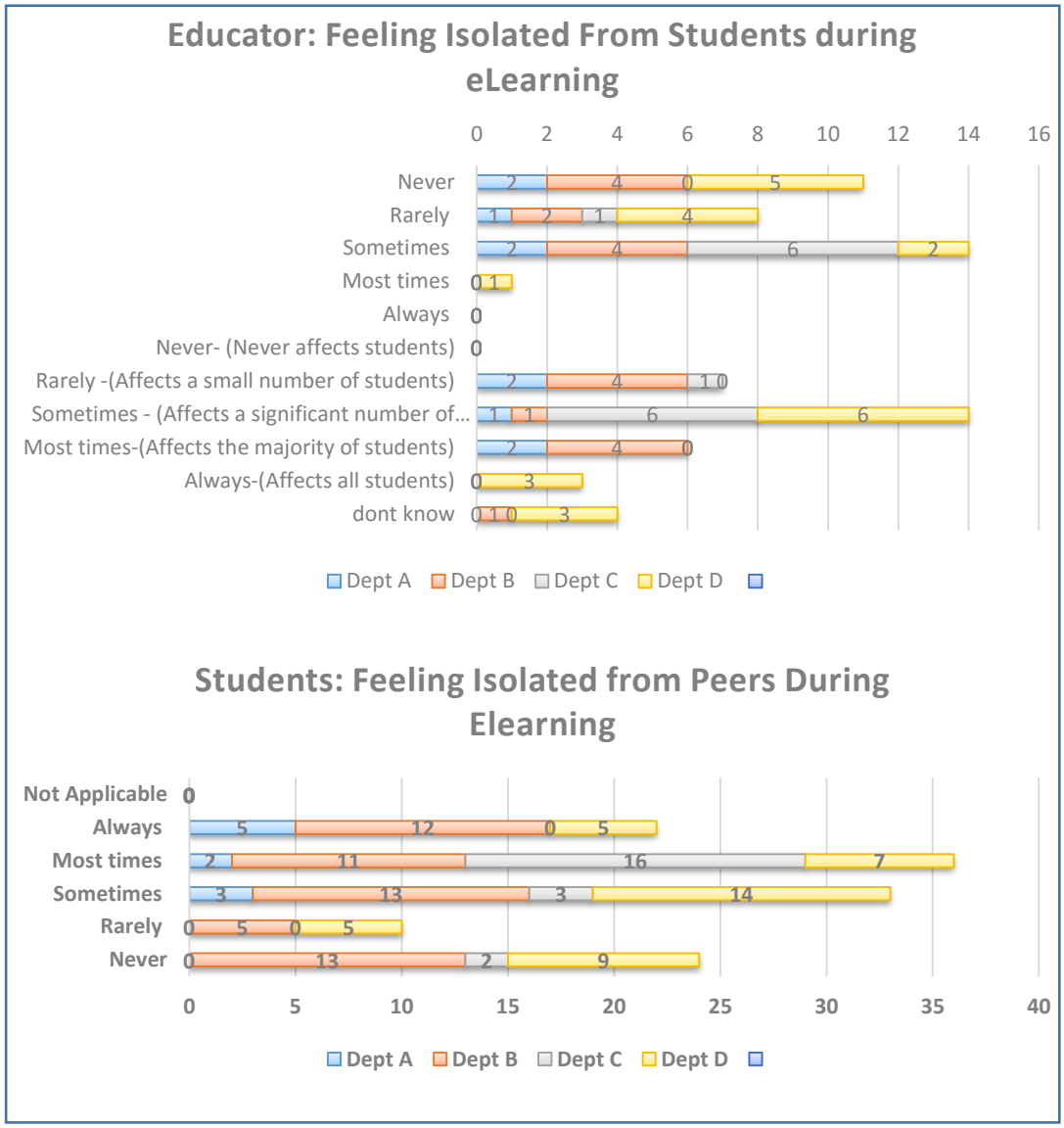


Figure 56: Q9C. Educator & student responses regarding feeling isolated from students when e-learning.

Having asked about student feelings of peer isolation when e-learning, the next question asked about perceived educator and student lack of interaction.

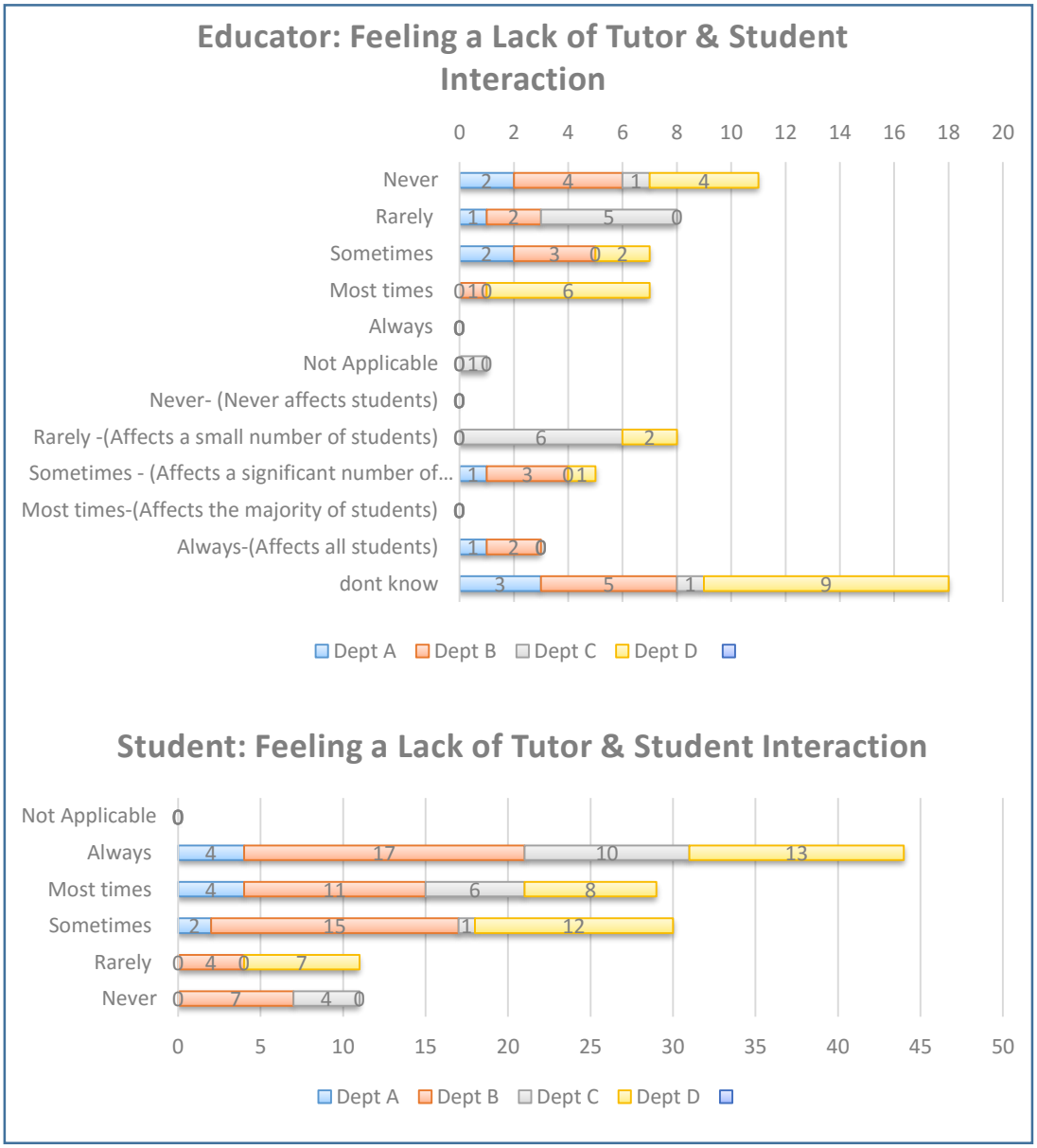


Figure 57: Q9D. Educator and student responses to feeling a lack of tutor / student interaction when engaged in e-learning.

Figure 57 indicated varied views from educators, with students appearing more polarised toward a perceived lack of interaction (n=44, 35% overall 'Always' and 23% (n=29) selecting 'Most times'). Just over half of educators selected they did not know how students felt on this issue (n=18, 53% overall), with department D educators selected 'don't know' the most times (n=9, 75%).

Figure 58 presents results from Question 9e, with the majority of educators reporting 'never' or 'rarely' experiencing inability to self-motivate and keep to deadlines when

engaging in e-learning, yet the majority of department B educators (n=6, 60%) felt the same challenge affected the majority of their students.

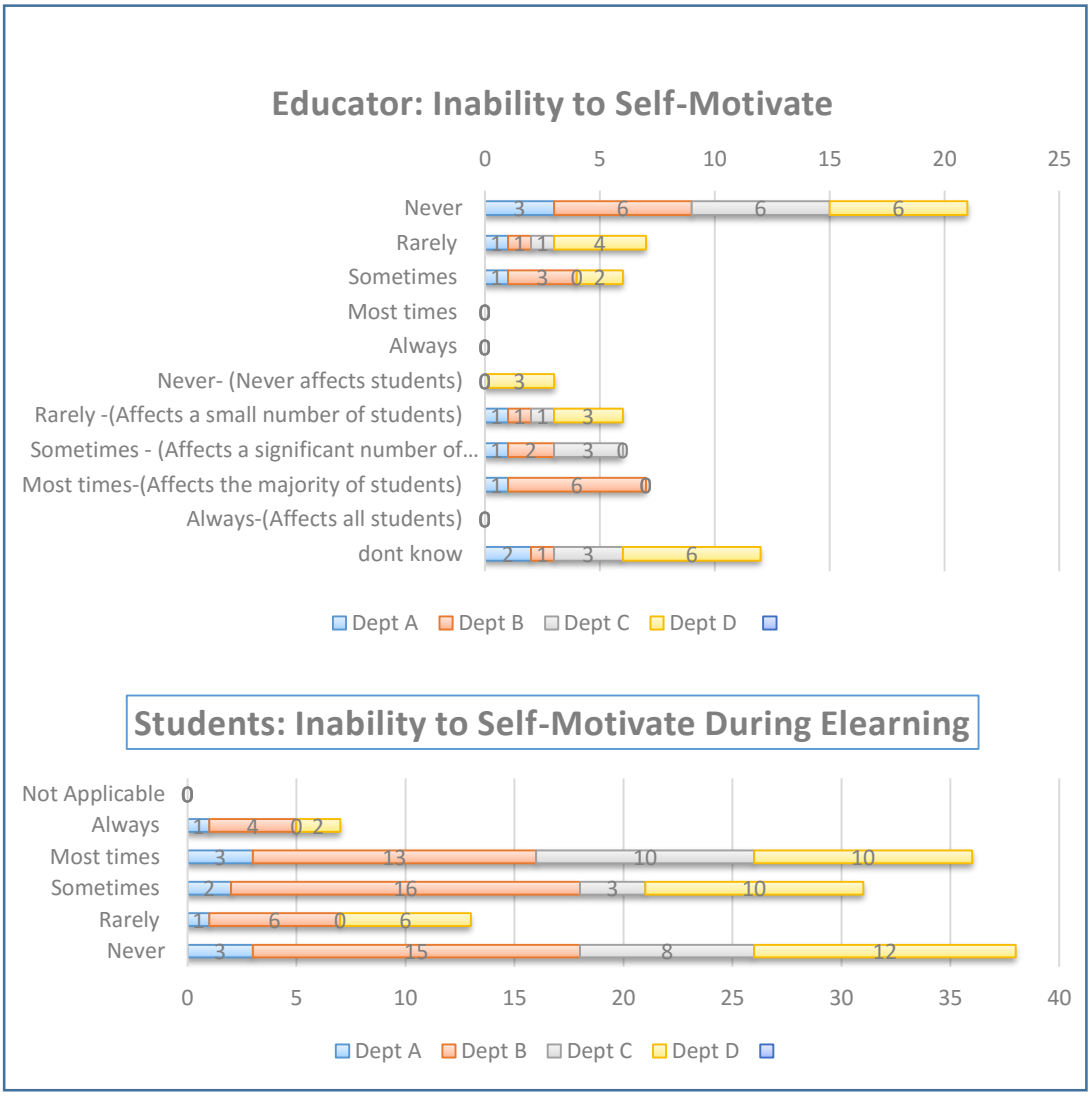


Figure 58: Q9E. Educator and student responses regarding inability to self-motivate to keep to study deadlines when e-learning

In contrast to department B, a minority of department D educators appeared the only respondents to select that students 'never' demonstrate an inability to self-motivate when e-learning (n=3), whilst half of department D (n=6) educators responded they did not know. Student results for the same question presented a mixed picture, with the majority (n=87, 70%) selecting an inability to self-motivate when e-learning to some degree; the largest subset being 'most times' at 29% overall (n=36).

Regarding Q9f on feeling uncomfortable when writing to a discussion board, Figure 59 indicated all educators from departments A, B and C reported 'never' (n=22, 65%

overall), or ‘rarely’ (n=6, 18%) feeling uncomfortable, whilst half of department D educators (n=6) reported sometimes feeling uncomfortable. department D educators recorded the most negative views on their students feeling uncomfortable when writing to a discussion board. Corresponding student responses showed a broad range of views, clustering on ‘sometimes’, including 43%, n=17) of department D students.

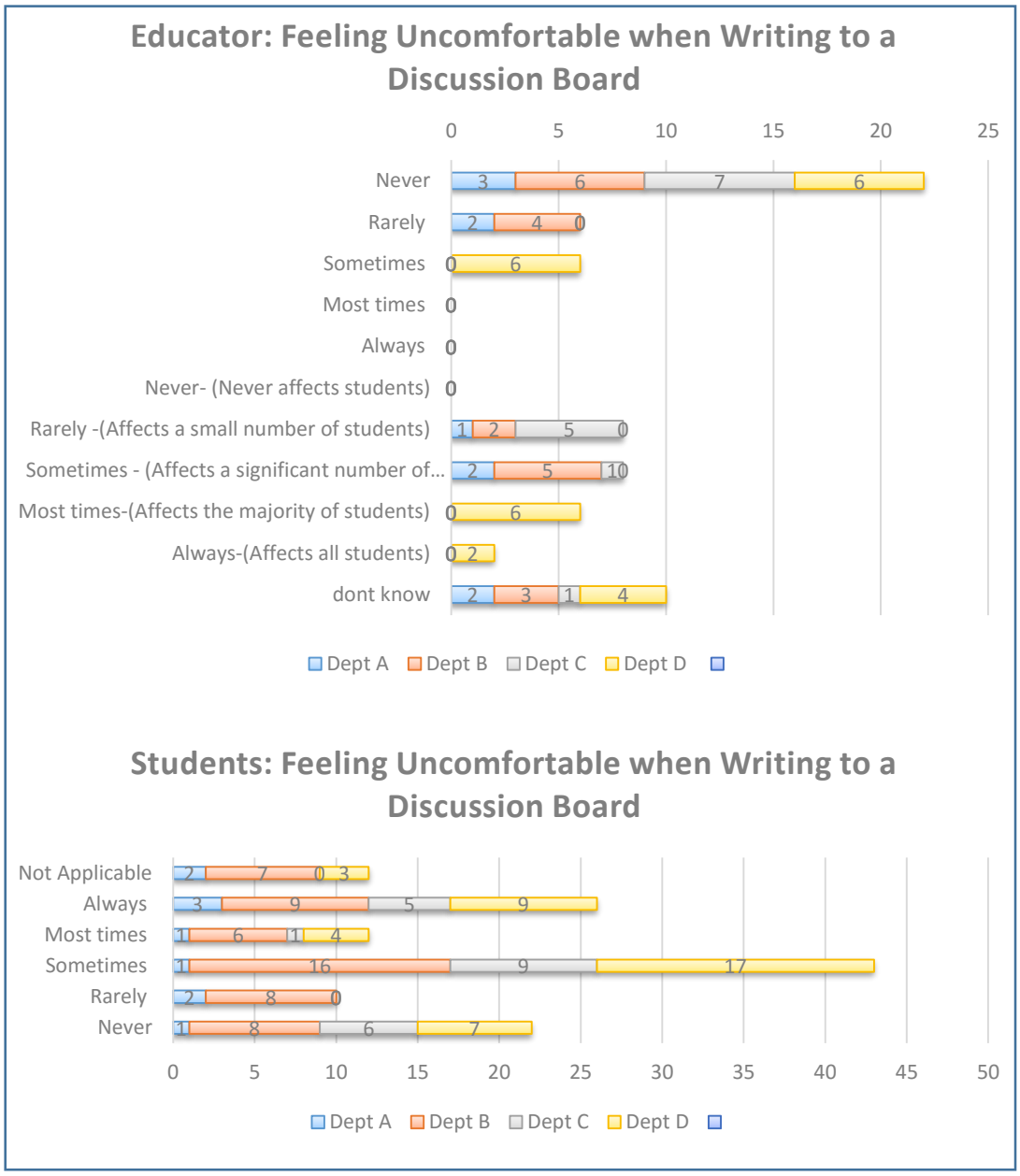


Figure 59: Q9F. Educator and student responses to feeling uncomfortable about writing to a discussion board

Q9g asked whether participants were challenged by a lack of time to engage in e-learning outside the standard university day. Some educators (predominantly from department B and C at n=9, (90%) and n=6, (86%) reporting ‘sometimes’), with 58%

of department D educators reporting 'Never' (n=7). Although 35% (n=12) of educators selected they did not know if students experienced a lack of time, educator views largely corresponded with the results from students, with department B educators believing this challenge affected a 'significant number' of students (n=7, 70%), and their students selecting this to be true for 54% (n=29) of responders at least 'Sometimes'.

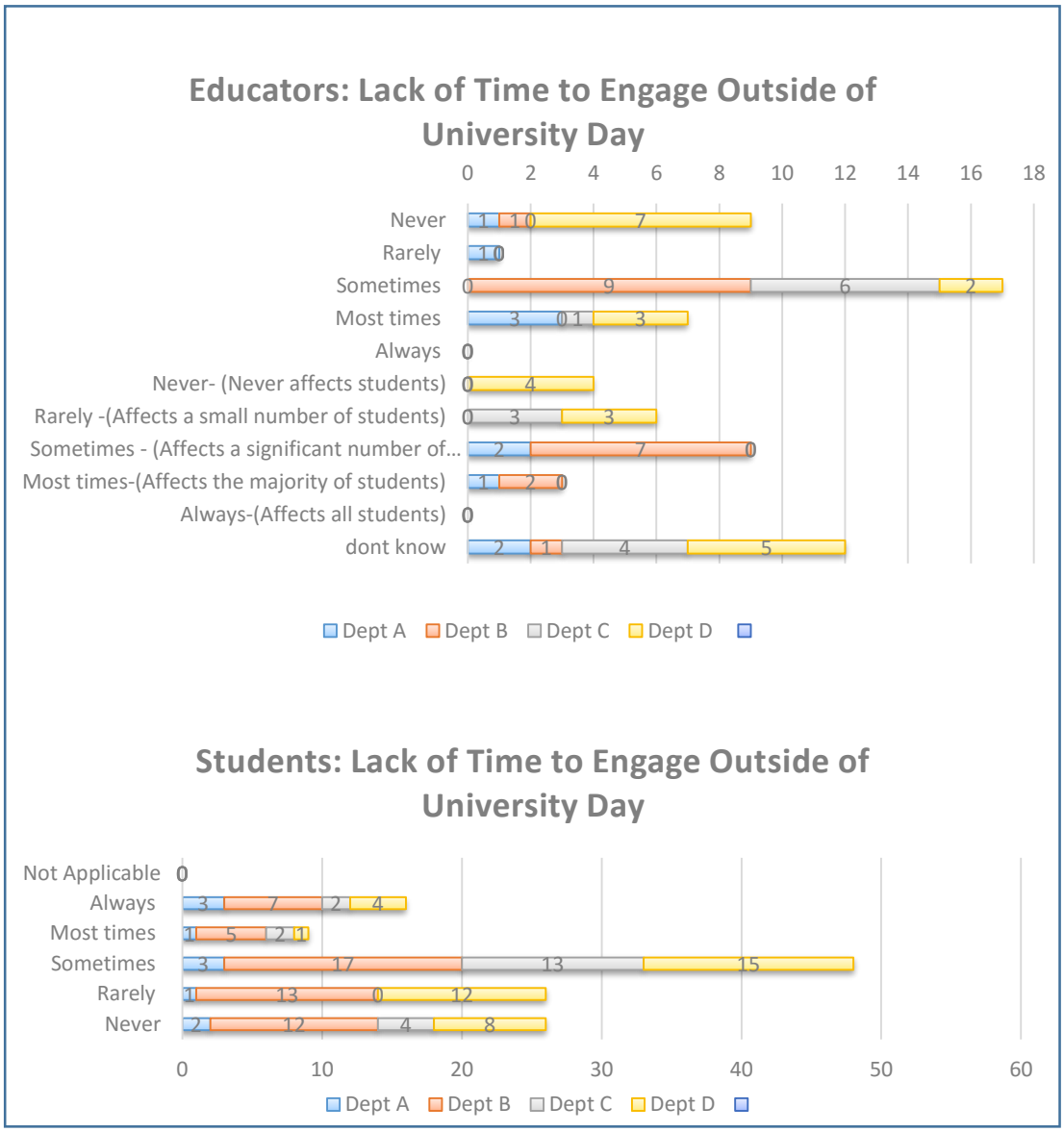


Figure 60: Q9G. Educator and student responses to a lack of time to engage in e-learning outside of standard university study hours

Q9h asked if confusion over the purpose of e-learning existed. Departments C and D educators predominantly selected 'Never' to being personally confused, whilst several department A and B educators selected 'Sometimes' and 'Most times'.

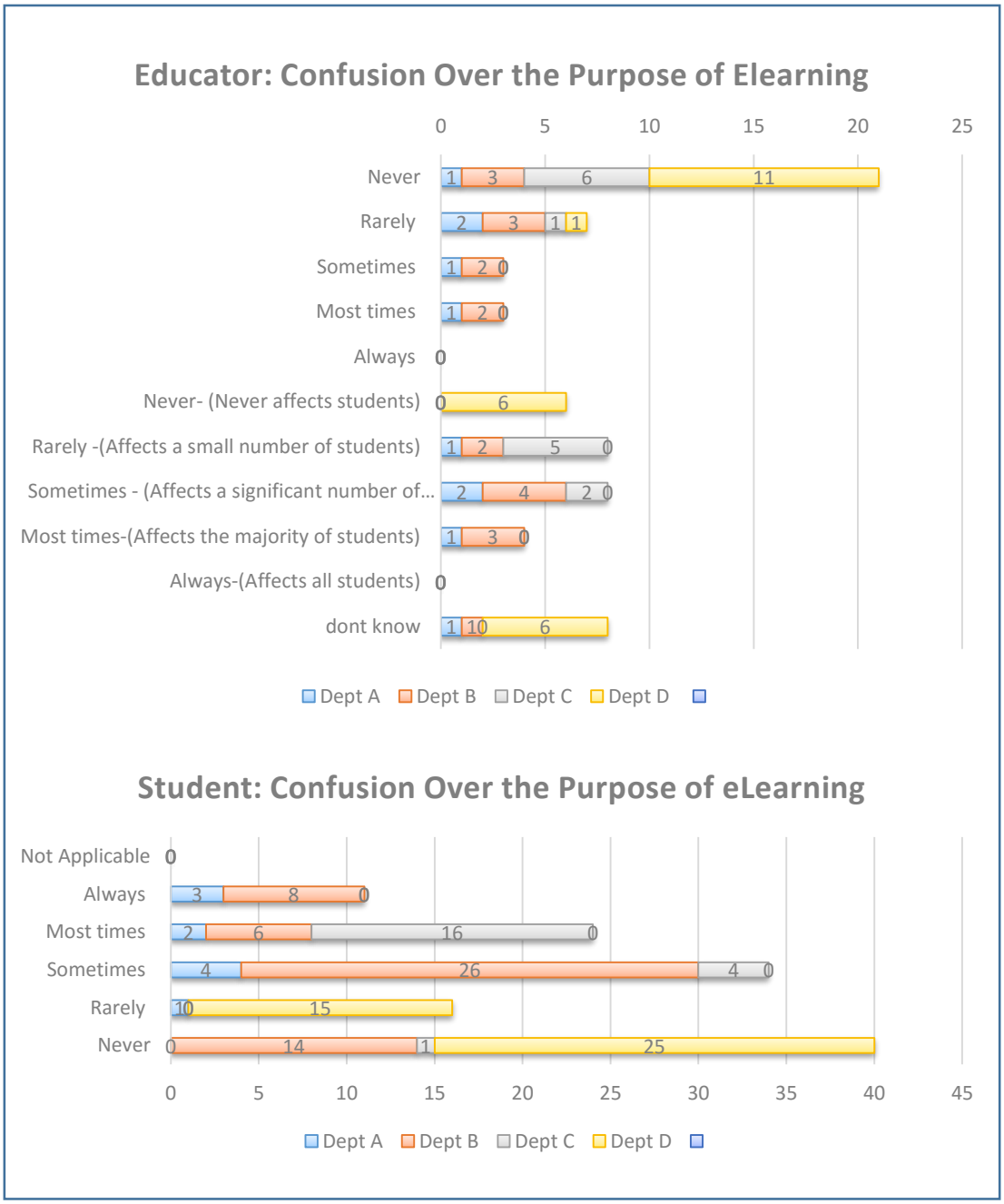


Figure 61: Q9h. Educator responses to the presence of confusion over the purpose of e-learning.

Student group responses presented a mixed picture and ranged across the frequency options, with department D students reporting mainly never or rarely.

Figure 62 for Q9i explored if educators and students feel education to be constrained by e-learning and indicated a complex picture.

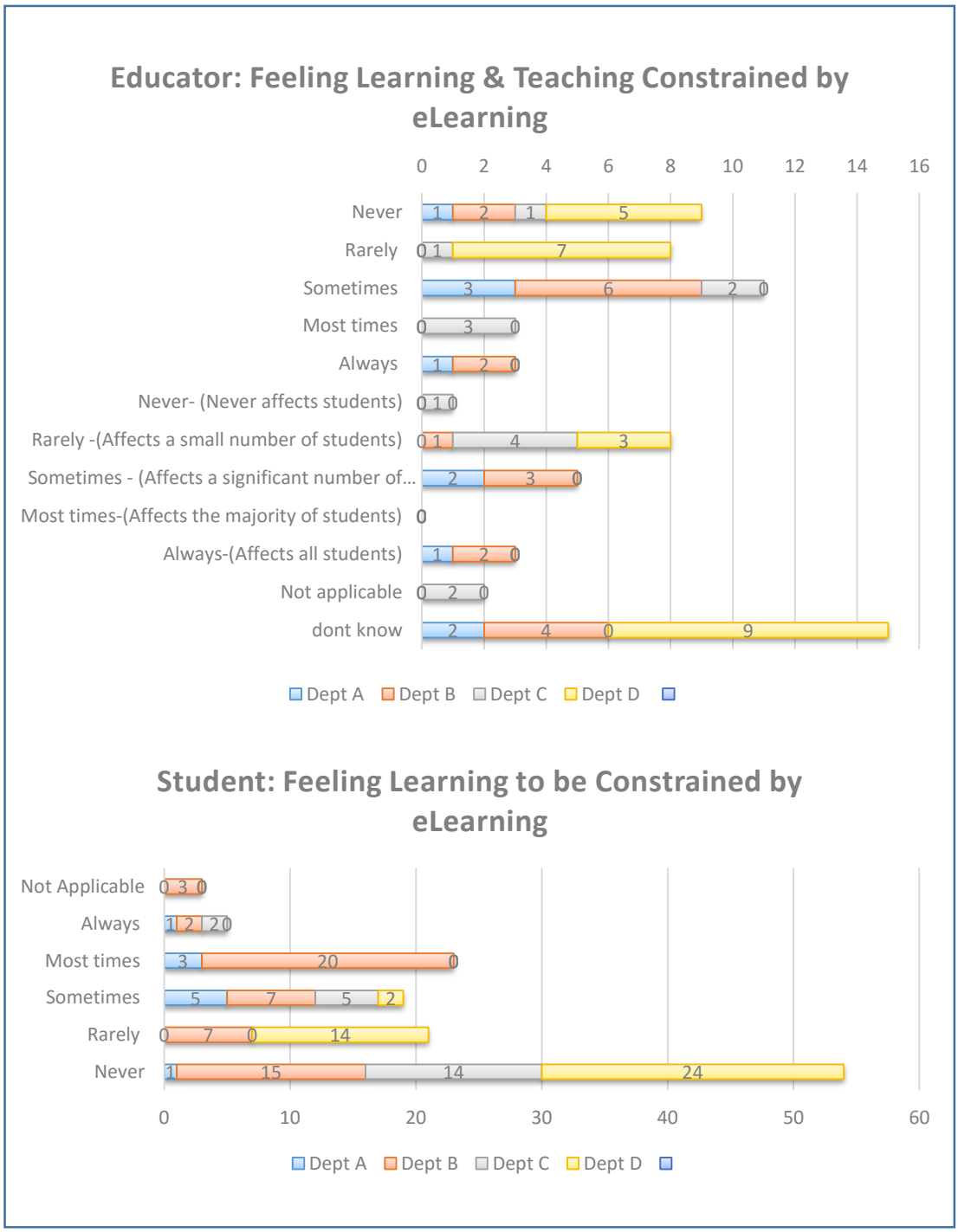


Figure 62: Q9i. Educator and student views on teaching & learning being constrained by e-learning.

Department B educators largely felt their teaching to be constrained by e-learning (n=6, 60% 'sometimes', and n=2, 'always') and felt their student's learning to be constrained to varying degrees (n=6, 60% overall), with the remaining four department B educators returning 'don't know'. This picture was similar to departments A and C, but contrasted with department D educator responses of which 42% (n=5) selected e-learning to

‘never’ constrain their teaching, with the remaining 58% (n=7) department D educators selecting ‘rarely’. The corresponding question for students showed the majority of department B students felt their learning constrained by e-learning ‘most times’ (n=20, 37%), whilst department D students returned ‘never’ in 60% of their responses (n=24), with a further 35% (n=14) selecting ‘rarely’. These opposing pictures suggested two differing approaches to e-learning, which was explored in data Set 2 later in this Chapter

Question 9J asked respondents if there was difficulty in understanding e-content, the results of which are presented in Figure 63. Question 9Ja was included in the educator questionnaire to maintain alignment of the question stems for data analysis purposes, and as one might expect all educators responded with ‘never’ or ‘not applicable’ bar one department A educator who selected ‘rarely’.

Although no educator from any department responded that difficulty understanding e-content ‘never’ existed for their students, mixed views were expressed as to the scale of the challenge. Again, department D educators responded with proportionately more ‘don’t know’ responses than other departments (n=6, 50%) and proportionately the most number of ‘affects a small number of students’ (n=6, 50%). Corresponding student responses proved mixed, with the largest overall clusters being for ‘sometimes have difficulty understanding e-content’ (n=61, 49% overall), and ‘never’ at 26% overall (n=32).

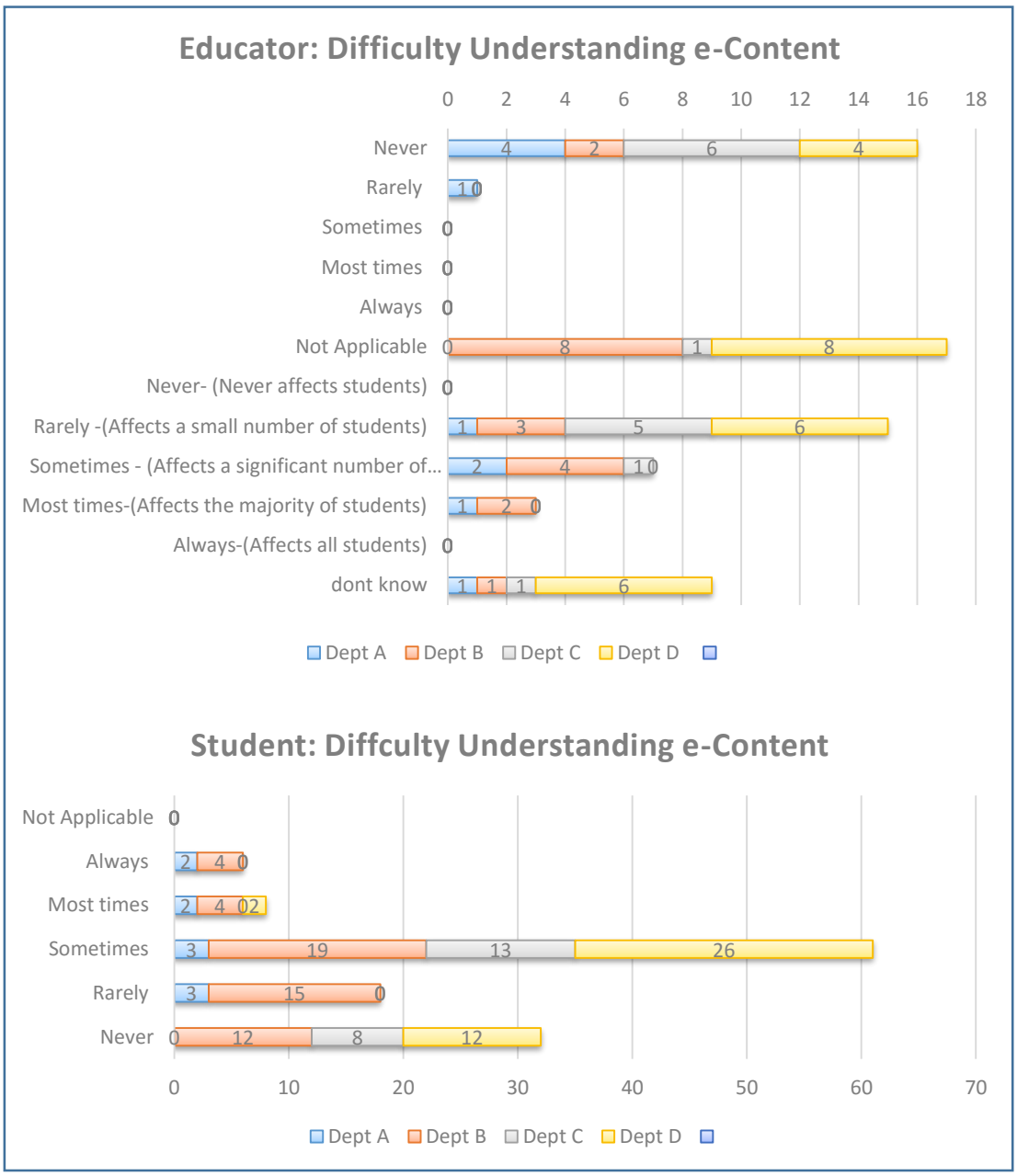


Figure 63: Q9j. Educator and student responses to the question of difficulty in understanding e-content.

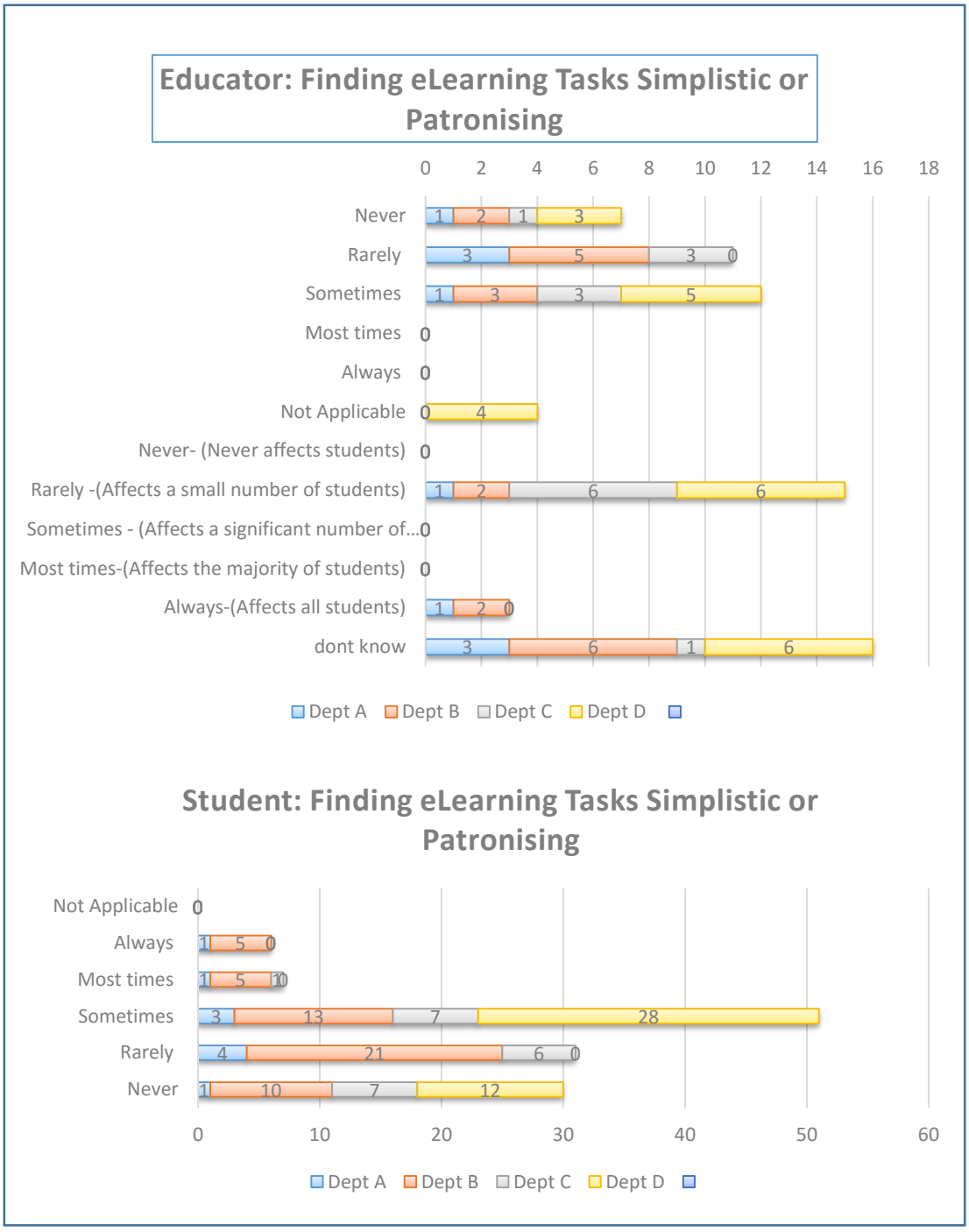


Figure 64: Q9K. Educator and student responses to finding e-learning tasks simplistic or patronising.

In contrast to the challenge of findings e-learning content difficult, was the potential for responders to find e-learning tasks simplistic or patronising. Figure 64 for Q9k showed a mixed picture in which the issue did exist within each department for both educators and students to varying degrees.

The final potential e-learning challenge identified from the literature related to problematic access to online materials through unreliable website functionality. Figure 65 data identified the problem to exist across all four departments. Proportionately more department D students selected 'most times' compared to other students (n=24, 60%) likely as a result of their predominance of living on campus.

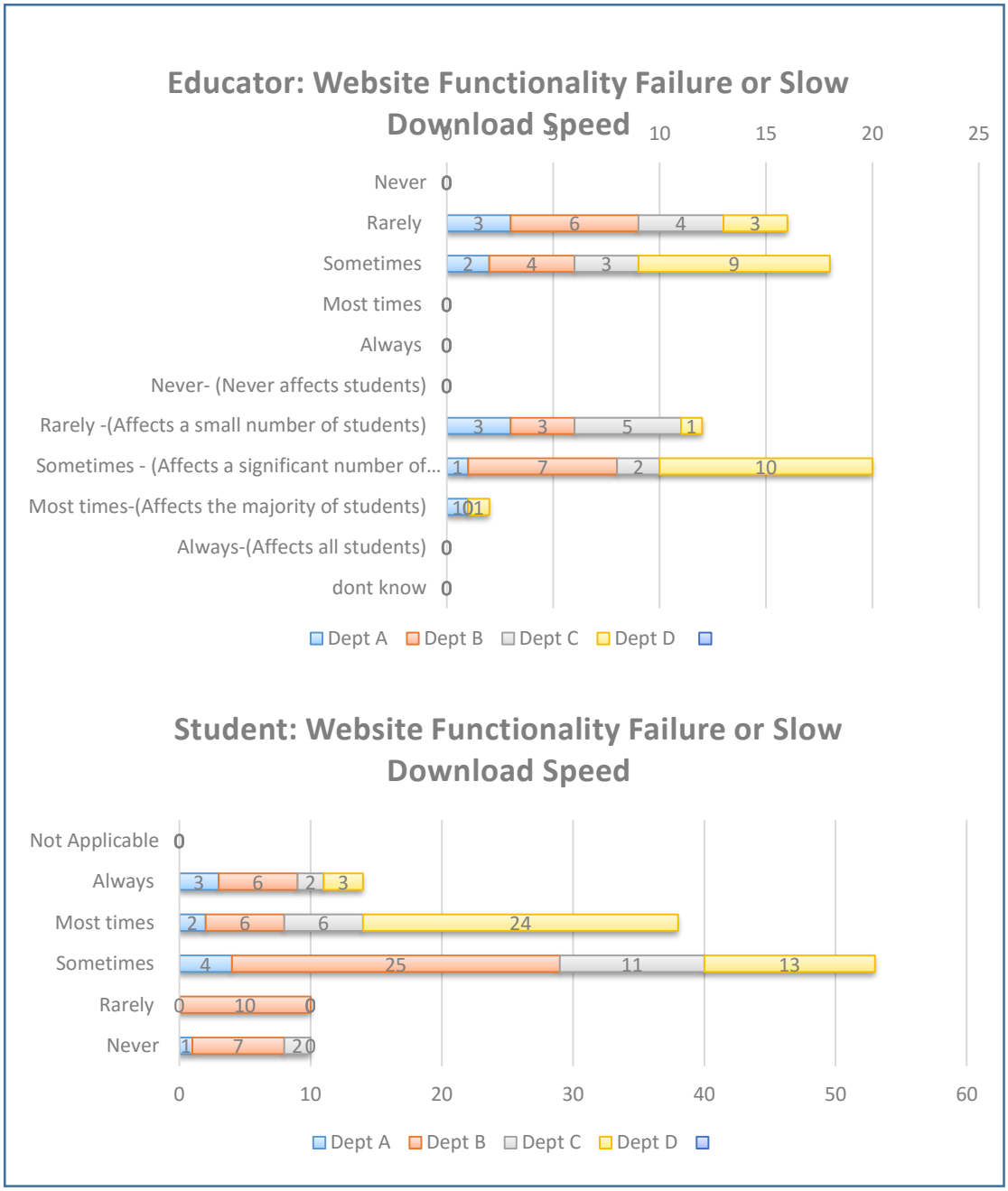


Figure 65: Q9L. Educator and student responses to problematic access to online materials due to website functionality failure or slow download speed.

4.9.1: Question 9 summary of results

Question Nine asked educators and students to consider if engaging in e-learning produced challenges for the teaching and learning experience. Whereas students were asked to consider their university experience, educators were asked to consider the question in relation to their teaching role and again for their students as learners. All twelve e-learning challenges identified in the literature appeared to be perceived as present to some degree by educators and also perceived as present by educators for their students to varying degrees across the four departments. Tables 11 to 13 provide a collated summary of findings.

Table 11: Total number of times educators selected each category in relation to themselves within question 9 challenges.

Total number of times Educators selected each category	**Never**	**Rarely**	**Some times**	**Most times**	**Always**	**N/A**
Dept. A number of Selections	**19**	17	18	5	1	0
As a percentage of total possible responses (5x12=60)	**32%**	28%	30%	8%	2%	0%
Dept. B number of Selections	32	29	**38**	11	2	8
As a percentage of total possible responses (10x12=120)	27%	24%	**32%**	9%	2%	7%
Dept. C number of Selections	31	**22**	25	4	0	2
As a percentage of total possible responses (7x12=84)	37%	**26%**	30%	5%	0%	2%
Dept. D number of Selections	**51**	29	41	11	0	12
As a percentage of total possible responses (12x12=144)	**35%**	20%	28%	8%	0%	8%
Variance Across Mean Educator Response	**32.8% +/-10%**	24.5% +/-8%	30% +/-4%	7.5% +/-4%	1% +/-2%	4.25% +/-8%

Table 11 shows the total number of educator responses to Q9a (personal challenges) for each category, collated as raw numbers and as a percentage of possible responses for the differing sized departments to aid description of data and clarify any gross variation between departmental respondent views.

Table 11 indicated that overall educator views on the frequency of personal challenges appeared broadly similar across departments, ranging from 2% to 10% variance per category when the differing number of respondents are taken into account. For

educators, personal challenges most commonly occurred ‘never’ (32.8%), ‘sometimes’ (30%), or ‘rarely’ (24.5%), with low levels of selection for the other categories.

Educator reporting of personal challenges differed from their views on how frequently the same issues occur for their students (Table 12). The data proved not to be directly comparable, as 28% of educator responses were ‘don’t know’ (ranging from 8% in department C to 42% in department D). The remaining responses considered the same challenges ‘never’ to occur for their students in only 2% of selections (mean result ranging from 0% for department A and 6% for department D).

Table 12: Total number of times educator respondents selected each category in relation to their students within question 9A.

Totals for educators selecting each category when estimating Student Challenges	**Never -** (Never affects students)	**Rarely** (Affects a small number of students)	**Sometime** (Affects a significant number of students)	**Most times -** (Affects the majority of students)	**Always** (Affects all students)	**N/A**	**Don’t Know**
Dept. A number of Selections	0	12	**18**	9	3	0	**18**
As a Percentage of Respondents	0%	20%	**30%**	15%	5%	0%	**30%**
Dept. B number of Selections	1	23	**44**	19	6	0	27
As a Percentage of Respondents	1%	19%	**37%**	16%	5%	0%	23%
Dept. C number of Selections	1	**49**	16		0	2	15
As a Percentage of Respondents	1%	**58%**	19%	1%	0%	2%	18%
Dept. D number of Selections	8	45	19	7	5	0	**60**
As a Percentage of Respondents	6%	31%	13%	5%	3%	0%	**42%**
Variance Across Mean Educator Response	2% +/-6	**32% +/-39**	24.75% +/-24	9.25% +/-15	3.25% +/-2	0.5% =/-2	28.25 +/-24

The most common educator prediction of student challenges were for ‘rarely’ (32% mean) and ‘sometimes’ (24.75% mean). This finding suggested educators over predicted the number of students facing challenges when e-learning, yet under predicted the frequency of when challenges were faced.

From Table 13 it can be seen that students selected 'never' experiencing a particular challenge 23% of the time (mean), in contrast to educator estimates ranging from 0% to 6%. With the exception of the 'rarely' category (educator 32% compared to student 11%), students rated the frequency of challenge greater than the educator respondent estimations (the greatest difference being the 'always' category with mean educator selections at 3.25% and mean student selections at 12.75%.

Table 13: Total number of times student respondents selected each category in relation to e-learning challenges within question 9.

Number of times Students selected each category	**Never**	**Rarely**	**Some-times**	**Most times**	**Always**	**N/A**
Dept A number of Selections	18	13	**37**	23	27	2
As a Percentage of Respondents (5x12=60)	15%	11%	**31%**	19%	23%	2%
Dept B number of Selections	174	101	**187**	98	77	11
As a Percentage of Respondents (10x12=120)	27%	16%	**29%**	15%	12%	2%
Dept C number of Selections	**85**	10	73	62	21	1
As a Percentage of Respondents (7x12=84)	**34%**	4%	29%	25%	8%	0%
Dept D number of Selections	**179**	64	142	56	36	3
As a Percentage of Respondents (12x12=144)	**37%**	13%	30%	12%	8%	1%
Variance Across Mean Educator Response	23.3% +/-22	11% +/-11	**29.8% +/-2**	17.75% +/- 13	12.75% +/- 15	1.25% +/- 1

4.10. Question 10: Educator and student attitudes to e-learning.

Finally, respondents were asked to complete an attitudinal survey and select their level of agreement to six positive and six negative statements covering pertinent e-learning issues identified during the attitudinal tool development process (Chapter 3.).

Summations of results for educators and students are first collectively presented to give an overview, before individual department results are considered and analysed under two broad categories of 1) Attitude to pedagogical aspects of e-learning and 2) Attitude to process and instructional design. As with previous question data analysis, the researcher remains cognisant that a Likert scale is an ordinal measure and

summation of scores is only normally used for interval data. The collated scores are therefore presented only to aid description of the differing departments within the case university, with an illustrative 'positivity score' having been calculated using the formula in Table 14.

Table 14 Attitude scoring scale

Positive Statement Scoring	Negative Statement Scoring	Positivity Calculation	Statement Positivity Score Percentage
4= Strongly Agree 3 = Agree 2 = Disagree 1 = Strongly Disagree	4 = Strongly Disagree 3 = Disagree 2 = Agree 1 = Strongly Agree	Sum of (n)* multiplied by column statement Scores	Positivity Score divided by the maximum score if all respondents chose strongly agree (positive statement) or strongly disagree (negative statement) within a department **

* Where (n) = number of department responses in each column

** e.g. 21 respondents in department C = potential highest positivity score of 84. By scoring 35 in Q10h, they achieve a % score of 35/84*100 = 42% positivity

Although representation of ordinal, as opposed to interval data, Table 14 and Table 15 summations do highlight some interesting points. Scores suggested that educators and students were similarly positive in attitude regarding many of the statements, yet some exceptions existed. When comparing overall scores and positivity percentages, pedagogical attitudinal statements ranged from 40 to 71 for educators and 56 to 74 for students. Students appeared more positive in relation to e-learning pedagogy than their educators with a median positivity score of 72% compared to their educators overall score of 48% positivity. When considering process and instructional design related statements, attitudes for both groups are more aligned, with students scoring 48% median and educators 50%.

Table 15: Summation of educator and student scores & positivity

Pedagogical Attitudinal Statements (Green = positive, Red = negative)				
Statement	**Educator Positivity Score**	**Educator Positivity %**	**Student positivity Score**	**Student positively %**
b. Online discussion boards / forums are central to effective e-learning	100	59%	279	56%
h. I think it is a good idea to use student's social websites (such as Facebook) as a means of teaching or giving feedback	78	46%	281	56%
j. For myself, teaching is best as a blend of face to face and e-learning strategies	121	71%	368	74%
g. When learning is mediated through technology, this diminishes the value of teaching	102	60%	358	72%
i. Due to the open nature of the World Wide Web, it is almost inevitable that students will plagiarise the work of others	68	40%	385	77%
l. e-learning is a poor motivator to learn and keep to deadlines	82	48%	314	63%
Median	**82**	**48%**	**358**	**72%**
Process Attitudinal Statements (Green = positive, Red = negative)				
Statement	**Educator positively Score**	**Educator positively %**	**Student positively Score**	**Student positively %**
a. I am sufficiently computer literate to meet my learning needs	102	60%	364	58%
e. If students are expected to learn flexibly during evenings and weekends, so lecturers should be available to facilitate that learning in the same flexible way	84	49%	346	55%
c. Online periodic assessments /quizzes contribute significantly to effective E-learning	91	54%	301	48%
d. The level of information technology and e-learning support within the University is insufficient for my needs	85	50%	289	46%
f. I don't have time to engage flexibly with e-learning activities outside of normal university campus hours (9-5)	59	35%	292	47%
k. e-learning is when students are left to learn on their own	100	59%	297	48%
Median	**85**	**50%**	**297**	**48%**

On closer inspection however, the picture was more complex, with Table 16 highlighting differences in mean and median scores across departments due to either students or educators within a single department feeling strongly positive or strongly negative toward a specific statement. For example, department D educators scoring 19% positivity (strongly negative) to the statement F ' *I don't have time to engage flexibly with e-learning activities outside of normal university campus hours (9-5)'* or department C selecting overwhelmingly 'strongly agree' (n=6), with one selection of'

'agree' resulting in a high positively score to statement J *'For myself, teaching is best as a blend of face-to-face and e-learning strategies'* at 96%.

Table 16: Summation of educator and student scores by statement and department.

Statement	Department A		Department B		Department C		Department D	
	Educator (n=5)	Student (n=10)	Educator (n=10)	Student (n=54)	Educator (n=7)	Student (n=21	Educator (n=12)	Student (n=40)
OVERALL RANGE	40-85	43-80	45-85	47-79	36-96	42 - 89	19-96	56-78
OVERALL MEAN	61%	61%	64%	63%	64%	63%	70%	68%
OVERALL MEDIAN	60%	64%	65%	66%	64%	61%	74%	70%
Pedagogical Attitudinal Statements (Green = positive, Red = negative)								
a. I am sufficiently computer literate to meet student learning needs	70%	73%	65%	69%	75%	73%	85%	78%
b. Online discussion boards / forums are central to effective e-learning	85%	43%	80%	49%	71%	55%	65%	69%
c. Online periodic assessments /quizzes contribute significantly to effective E-learning	65%	48%	65%	51%	57%	56%	75%	78%
d. The level of information technology and e-learning support within the University is insufficient for my needs	55%	43%	55%	61%	68%	61%	69%	56%
e. If students are expected to learn flexibly during evenings and weekends, so lecturers should be available to facilitate that learning in the same flexible way	80%	68%	75%	76%	61%	69%	44%	60%
f. I don't have time to engage flexibly with e-learning activities outside of normal university campus hours (9-5)	50%	53%	65%	64%	50%	44%	19%	60%
PEDAGOGY STATEMENT RANGE	50-70	43-73	55.8	49-76	50.75	44.73	19-85	56-78
PEDAGOGY STATEMENT MEAN	68%	54%	68%	62%	64%	60%	59%	67%
PEDAGOGY STATEMENT MEDIAN	68%	50%	65%	62%	64%	58%	67%	64%
Process Attitudinal Statements (Green = positive, Red = negative)								
g. When learning is mediated through technology, this diminishes the value of teaching	70%	70%	70%	74%	75%	71%	81%	69%
h. I think it is a good idea to use student's social websites (such as Facebook) as a means of teaching or giving feedback	45%	53%	50%	50%	46%	42%	75%	73%
i. Due to the open nature of the World Wide Web, it is almost inevitable that students will plagiarise the work of others	40%	73%	45%	79%	36%	81%	67%	74%
j. For myself, teaching is best as a blend of face to face and e-learning strategies	75%	73%	85%	68%	96%	89%	94%	73%
k. e-learning is when students are left to learn on their own	45%	80%	65%	47%	68%	61%	96%	70%
l. e-learning is a poor motivator to learn and keep to deadlines	55%	60%	48%	69%	61%	54%	73%	60%
PROCESS STATEMENT RANGE	40-75	53-80	45-85	47-79	36-75	42-89	67-96	60-74
PROCESS STATEMENT MEAN	55%	68%	60%	64%	64%	66%	81%	70%
PROCESS STATEMENT MEDIAN	50%	71%	58%	69%	64%	66%	78%	72%

These variations in attitude inevitably had an effect on overall mean summation of scores, and since the ordinal data in a Likert scale are unlikely to be of equal weighting in respondent's views (Jamieson 2004), it is the pattern of response and not the summated scores that were of more importance when considering the differences between department responses.

To explore these differences further, scoring patterns were scrutinised under two key categories which emerged during the attitudinal tool design phase (See Chapter 3.7, Specific research design), namely, Attitude to pedagogical aspects of e-learning and Process issues and instructional design.

4.10.1: Attitudes to pedagogical aspects of e-learning

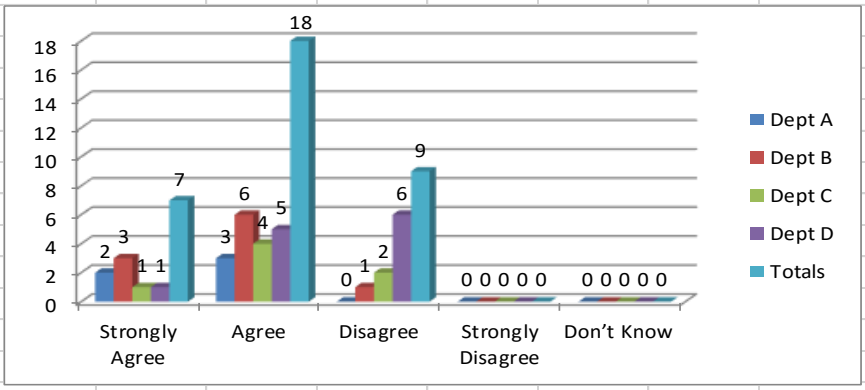
As can be seen previously in Table 15, the median scores of educator positive attitudes to pedagogical aspects of e-learning ranged from 59% (department D), to 68% (departments A and B); whilst corresponding student scoring ranged from 54% (department A students) to 67% (department D students). In the interest of brevity and conciseness, full departmental results and corresponding illustrative charts are available within Appendix I, whilst the following written analysis focuses on the key patterns from that data.

Educators and students across all four departments proved highly positive in relation to statement 10a '*I am sufficiently computer literate to meet student learning needs*.' Scores ranged from 65% (department C educators, (n=7) to 85% (department D educators (n=12), with corresponding student scores within 7% of educator scores (Appendix I). This proved not to be the case in relation to statement 10b '*Online discussion boards / forums are central to effective e-learning*' where educators remained highly positive, particularly in departments A, B and C (85%, 80%, and 71% respectively) with department D educators slightly less positive at 65% (Figure 66). In comparison, students returned far less positivity, particularly in departments A and B 43% (n=7 disagree, n=3 strongly disagree and 49% (n=29 disagree, n=9 strongly disagree) respectively, with department C students scoring 55%. Only department D students appeared highly positive regarding this statement, scored slightly more than their educators at 69% (strongly agree n=3, Agree n=23, with disagree n=12, and strongly disagree n=5). This may be the effect of some department D students appearing greater personal users of social media than students from other department. (Also seen in Q7a.1 results in Figure 16).

Q10b Educator Data

b. Online discussion boards / forums are central to effective e-learning

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	2	**3**	0	0	0	17	85%
Dept B	3	**6**	1	0	0	32	80%
Dept C	1	**4**	2	0	0	20	71%
Dept D	1	5	**6**	0	0	31	65%
Totals	**7**	**18**	**9**	**0**	**0**	100	74%



Q10b Student Data

b. Online discussion boards / forums are central to effective e-learning

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	0	0	**7**	3	0	17	43%
Dept B	3	9	**29**	9	4	106	49%
Dept C	3	3	**10**	5	0	46	55%
Dept D	3	**23**	12	5	0	110	69%
Totals	9	35	**58**	22	4	279	56%

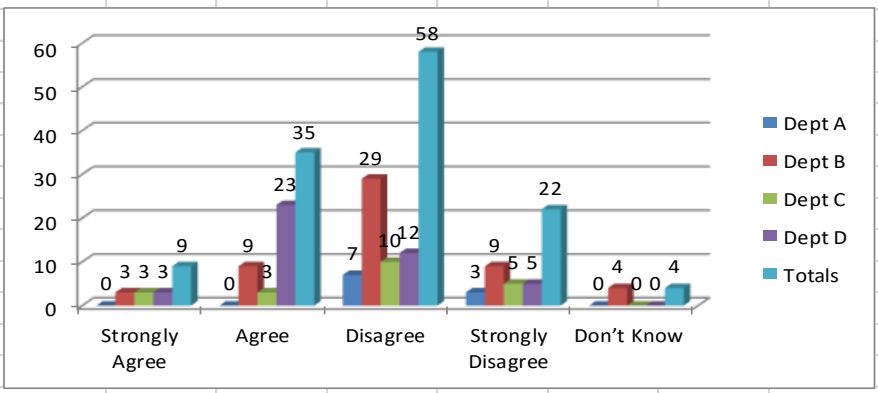


Figure 66: Attitude to online discussion board / forum.

A similar pattern was seen in relation to whether educators and students agreed that '*online periodic assessments / quizzes contribute significantly to effective e-learning*' with educators showing somewhat lower scoring, but still greater levels of positivity

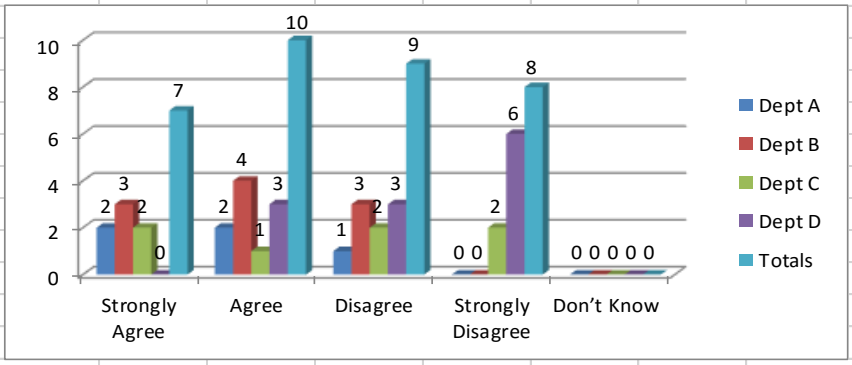
than their students in departments A and B (65% educator positivity compared to 48% for their students and 65% compared to 51% respectively) with department D again the most positive with educators at 75% and their students slightly more at 78%. Department C educators and students appeared of similar opinions scoring 57% and 56% respectively.

With regard to the final positive pedagogically focussed statement *of 'If students are expected to learn flexibly during evenings and weekends, so lecturers should be available to facilitate that learning in the same flexible way'* department D educator responses differed from all other positive educator results in they scored 44%, with no educators selecting 'strongly agree', and only n=3 educators selecting 'agree', whilst n=3 selected 'disagree', and n=6 'strongly disagree). These views contradict department B educators who Scored the most positively at 75% with 'strongly agree' n=3, 'agree' n=4, and 'disagree' at n=3. Interestingly, whereas students predominantly agreed with the statement, department D students showed the lowest score at 60%, and were the only group where no student selected 'strongly agree', returning 'agree' n=16, and 'disagree' n=24.

Two of the statements within the pedagogical aspects category were negative in nature. 10d stated '*The level of information technology and e-learning support within the university is insufficient for my needs*' to which all but department A students disagreed in the majority, ranging within departments from 55% to 69% positivity for educators and 56% to 61% for students in departments D, B and C, (Full chart presentations are available on the accompanying CD). Department A students however (n=10) returned 'strongly agree n=4, 'Agree' n=2, Disagree n=3, with 'don't know' n=1.

Q10e Educator Data

	e. If students are expected to learn flexibly during evenings and weekends, so lecturers should be available to facilitate that learning in the same flexible way						
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	**2**	**2**	1	0	0	16	80%
Dept B	3	**4**	3	0	0	30	75%
Dept C	**2**	1	**2**	**2**	0	17	61%
Dept D	0	3	3	**6**	0	21	44%
Totals	**7**	**10**	**9**	**8**	**0**	84	62%



Q10e Student Data

	e. If students are expected to learn flexibly during evenings and weekends, so lecturers should be available to facilitate that learning in the same flexible way						
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	1	**7**	1	0	1	27	68%
Dept B	14	**29**	11	0	0	165	76%
Dept C	5	**9**	4	3	0	58	69%
Dept D	0	16	**24**	0	0	96	60%
Totals	20	**61**	40	3	1	346	69%

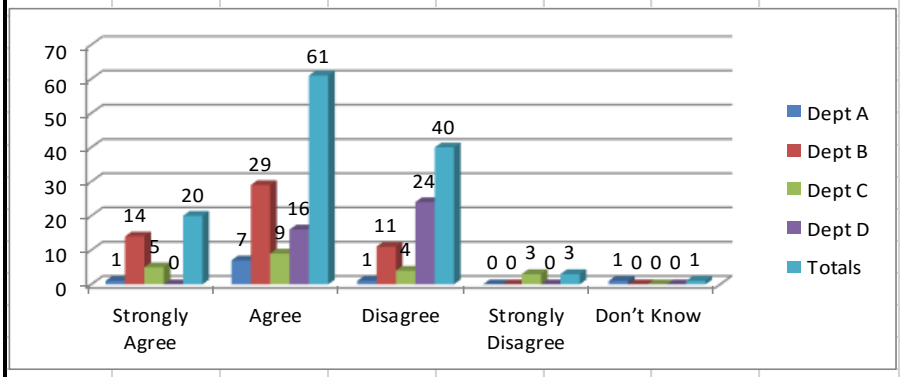


Figure 67: Attitudes to having time to work flexibly outside of university day.

It was in regard to Figure 67 and the statement 'I *don't have time to engage flexibly with e-learning activities outside of normal university campus hours (9-5)*' that

department D educators (n=12) returned the lowest positivity score in comparison to other department peers and their students at just 19% due to selections of 'strongly agree' n=9, with 'don't know' n=3. This compared with other department educator ranges of 50% (departments A and C) to 65% positivity for department B. Interestingly, corresponding student scores ranged from 44% (department C) to 64% (department B, with department D students scoring 60%.

Having highlighted some of the detail and contrasted educator and student overall positive attitudes to pedagogical e-learning statements, attention will now turn to a more mixed picture regarding attitudes to issues of process and instructional design in e-learning.

4.10.2: Attitudes to e-learning process and instructional design

When analysing respondent attitude to the process of e-learning such as instructional design or the infrastructure required, Table 13 showed a mixed picture of views. Students and educators from all four departments disagreed with statement 10g '*when learning is mediated through the use of technology, this diminishes the value of teaching*' (Appendix L) and so scored positive (ranging between 69% and 81%, (mean 73%, and median 71%). Such a strongly positive attitude from both educators and students was seen in only one other process statement, namely 10j '*For myself, teaching is best as a blend of face-to-face and e-learning strategies*' (ranging from 68% to 96%, (mean 82%, median 85%) and suggested both groups strongly approve of such an approach.

In response to the positive statement 10h, '*I think it is a good idea to use student's social websites (such as Facebook) as a means of teaching or giving feedback*' departments A, B appeared neutral in overall attitude score whilst department C appeared negative in their view (See Appendix I) where Dept. C Educators (n=7) scored 'strongly agree' n=0, 'agree' n=1, 'disagree' n=4, 'strongly disagree n=2; and department. C students (n=21), scored 'strongly agree' n=2, 'agree' n=1, 'disagree' n=6, 'strongly disagree n=12). This contrasted with department D educators (n=12) and students (n=40) who score 75% and 73% positivity respectively (Educators:

'strongly agree' n=3, 'agree' n=6, 'disagree' n=3, 'strongly disagree n=0; and student, 'strongly agree' n=6, 'agree' n=25, 'disagree' n=9, 'strongly disagree n=0). This again suggested that department D respondents were more open to the idea of communicating via social media when using e-learning.

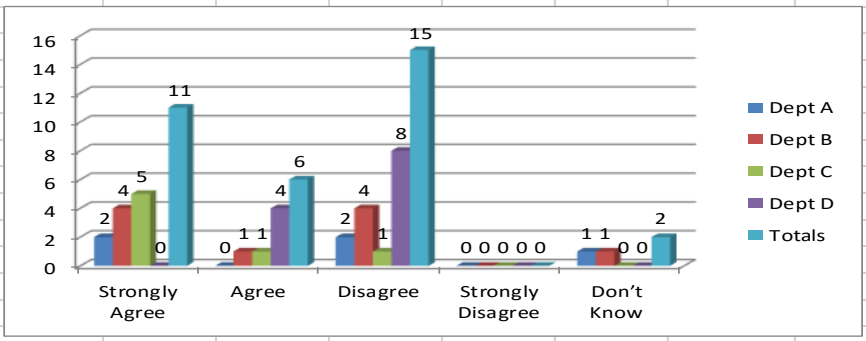
It was when analysing the negative statement 10i: *'Due to the open nature of the World Wide Web, it is almost inevitable that students will plagiarise the work of others'* that the pattern of responses showed the greatest difference between educator and student attitudes. All four department educators agreed more with this statement than did their students with Table 13 and figure 68 highlighting departments A, B and C educators all had negative attitudes to this topic, whilst their students had predominantly positive attitudes. As can be seen, department A scored 40% for educators and 73% for students; department B scored 45% for educators and 79% for students. Department C scored 36% for educators and 81% for students; with department D the only positive educator return of 67% with their students slightly higher at 74 %. (See Figure 68 for individual department responses and scores).

The final two statement results contained further differences in attitude between department educators and their students, and between departments, with responses to the negative statement 10k '*e-learning is when students are left to learn on their own*' showing department A educators agreeing at 45% positivity and their students disagreeing at 80%, compared to a reverse picture in department B where educators scored 65% and students 47% for the same statement. A less obvious, but similar picture was noted to the negative Statement 10L *'e-learning is a poor motivator to learn and keep to deadlines'* whereby department B educators appear the least positive of all department educators to this issue, scoring 48%, with their students scoring 69%, (See Appendix I for the number of responses and scoring).

Q10i Educator Data

i. Due to the open nature of the World Wide Web, it is almost inevitable that students will plagiarise the work of others

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	**2**	0	**2**	0	1	8	40%
Dept B	**4**	1	**4**	0	1	18	45%
Dept C	**5**	1	1	0	0	10	36%
Dept D	0	**4**	**8**	0	0	32	67%
Totals	11	6	**15**	0	2	68	50%



Q10i Student Data

i. Due to the open nature of the World Wide Web, it is almost inevitable that students will plagiarise the work of others

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	0	2	3	**4**	1	29	73%
Dept B	6	6	12	**29**	1	170	79%
Dept C	2	2	6	**11**	0	68	81%
Dept D	0	18	2	**19**	1	118	74%
Totals	8	28	23	**63**	3	385	77%

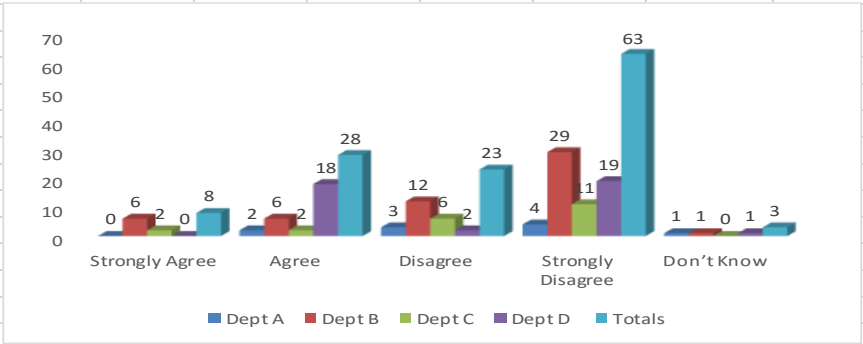


Figure 68: Educator and student attitude to the issue of online plagiarism.

4.10.3: Question 10 summary of analysis

The attitudinal questionnaire proved useful in highlighting underlying educator and student attitudes to key issues. Overall, educator and student attitudes to the principle of e-learning and underlying pedagogy were positive, however some negative attitudes were expressed in relation to certain processes and issues of infrastructure, particularly

with regard to department D educators. Analysis also showed students to be more consistent as a group in their positive attitudes than were their educators, although again exceptions to specific issues existed. Positive educator and student attitudes are aligned regarding issues such as their level of information technology skills, yet students showed more negative attitudes in relation to using module discussion boards in departments A, B, and C, with department D students appearing more positive, particularly in relation to the use of social media.

When considering e-learning processes, with the exception of department A student respondents appeared positive about the level of information technology and e-learning support available. Students appeared to hold positive views on the issue of information technology in education, and strongly positive views on the blending of learning techniques which alternate face-to-face and e-learning strategies. Educators in departments A, B, and C, however, held negative views on the inevitability of student plagiarism of online resources; a view which was not held by their students. Differences also existed with regard to attitudes to e-learning meaning that students are left to work independently, with department A students disagreeing (therefore showing a more positive attitude to the issue) and department B students strongly agreeing with the view.

4.11: Summary of data set 1: educator and student questionnaire

Having presented and analysed the substantial data produced in data set 1, the questionnaire proved successful in contextualising e-learning practice within the case university from both educator and student perspectives. The questionnaire highlighted differing departmental definitions of e-learning and approaches to the use of module web spaces which, in relation to issues such as use of module discussion boards, appeared at odds with the attitudes of educators and students. Questions four and five showed definitions of e-learning and blended learning were more focused on individual information management than communication within a community of learners. Question seven results, showed variation in educator practice and student engagement, whilst Question eight and nine highlighted that benefits discussed in the literature are present to varying degrees for both educators and students in each department, and that educators over assumed some student benefit, and underestimated

the frequency of challenges faced by students. Finally question ten proved useful in ascertaining differences in educator and student attitudes to differing aspects of e-learning. Each of these findings proved useful in guiding areas for exploration during the related undergraduate module web space reviews (data set two) and in highlighting likely topics of enquiry within the later educator semi structure interviews and student focus groups during data collection phase three.

Chapter Four presented data set one results for the educator and student qualitative questionnaires. The next chapter presents findings from a structured review of twelve undergraduate module web spaces associated with the relevant department educators and student programmes.

Chapter 5: Undergraduate Healthcare Module Reviews.

Table 17 provides a summary of the structured reviews of one module from each year of the core undergraduate healthcare programme within each of the case departments (Twelve modules in total). Using the criteria outlined in Chapter three and Table .5, distinction was sought between module web spaces which acted solely as an information repository (IR) and where no guidance on how to engage with the material was provided, and an information management (IM) structure, where the site author had given guidance on how the materials might be utilised, yet with no requirement to communicate online. A third distinction was full communication based e-learning (CBE). Identification was also made between module web spaces which were repositories for materials which supported class based educational sessions (CS), and module spaces categorised as 'blended learning', in that student engagement in the online materials were timetabled outside of class based teaching, and was a separate and further requirement of achieving the module learning outcomes (BL).

The context of healthcare e-learning engagement within the case university as one of primarily classroom based module teaching strategies supported by information repositories housed within the university's VLE. The materials produced on the module websites were often of a high standard, with department B being proactive in offering differing ways in which the student might access the same information on a topic in an attempt to cater for differing learning styles and preferences. There was very little evidence of what Salmon (2003) considered active online facilitation, nor what Moule (2006), or Parloff and Pratt (1999) defined as successful examples of online communities of learning. One attempt to make use of an asynchronous module discussion board and facilitate online constructivist learning was identified. This attempt, appeared superficially engaged in by students (department B, year 2). One module from the twelve modules reviewed (department D, Year 2) contained a learning outcome within the module descriptor directly relating to development of information technology skills or e-learning ability, assessed by an innovative and robust online assessment strategy. No department made use of mobile learning or virtual simulated worlds or gamification.

Table 17: Summary of module reviews for each department.

Review criteria	department A			department B			department C			department D		
	Yr1	Yr2	Yr3	Yr1	Yr2	Yr3	Yr1	Yr2	Yr3	Yr1	Yr2	Yr3
Module Overview												
Module Teaching Strategy / Structure	CS	CS	CS	BL	BL	BL	CS	CS	BL	BL	CS	BL
E-learning contribution to summative assessment?	No.	No	No	No	No	No	No	No	No	Yes	No	No
Overall e- Pedagogical approach?	IR	IR	IR	IM	CBE	IM	IR	IR	IM	IM	IM	IM
Use of module discussion boards	None	None	None	None	Yes	None	None	None	None	None	None	None
Level of interaction / Activities:												
Accessing databases / Library & resources /	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
External website hyperlinks	Yes	None	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
Links to Social media sites	No	No	No	No	No	No	No	No	No	No	No	No
Use of CD ROM / Video	Yes	None	No	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes
Writing to site WIKI / Blog	No	No	No	No	Yes	No	No	No	Yes	Yes	No	No
Uploading photo materials	No	No	No	No	No	No	No	No	Yes	No	No	No
Engage in online Quiz/ tests	No	No	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No
Online learning exercise / Reflections	No	No	No	Yes	Yes	Yes	No	No	No	Yes	No	No
Reference to use of mobile phone / tablet / mlearning	No	No	No	No	No	No	No	No	No	No	No	No
Evidence of Salmon's (2003) Five stage model of e-moderation by educators	Level 1	L 1	None	L 1	L1	L 1	L 1	L1	L1	L1	L1	L1
Evidence of Moule's (2006) conceptual model of online learning: The e-learning ladder	Level 1	L 1	None	L2	L2	L 2	L1	L1	L2	L2	L1	L1
Evidence of Palloff & Pratt's (1999) Effective Online Community	None	None	None	None	None	None	None	None	None	None	None	None
Student Controlled e- Learning **	P	P	P	P	P	P	P	P	P	P	E	E
Educator controlled learning	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

In keeping with an information management approach to TEL, sound use of database searching and information gathering was consistent throughout the departments. Within some programmes, further effort was made to increase the level of student online interaction via engagement with exercises and / or multimedia presentations; yet this appeared written for individual student effort, with few incidences of educators encouraging online group collaboration. Although department B made substantial use of (workbook based) reflective exercises, interactive exercises rarely suggested the use of online Blogs, (with one exception being in department C, year 3 module).

Within 50% (n=6) of the modules reviewed (including all three within department B), alternating scheduled class based learning with an information technology mediated experience was used, in what was defined as blended learning. This 'blend' of learning however, did not extend to student-controlled learning. Although selection of when to engage in materials was possible due to students being able to access all module sessions online from the start of the module, educators in all but two of the twelve modules did not actively encourage and often dissuaded, students from reading ahead of the timetable. Educators did not provide students with control or choice over what was learnt in any of the twelve modules reviewed. The timescales given to students did however, allow for students to self-pace their engagement within the wider deadline parameters controlled by the educators. With the exception of two department D modules, overall control of learning timelines was often kept by educators through sequencing sessions to include class based reviews of online content engagement at set periods, or using the VLE to instigate timed release and removal of the online materials, prescriptive exercises, or formative tests.

Overall, the standard of planning and technical ability proved variable within and across departments, with some very limited use of module spaces (as with department A) contrasting with some polished and technically sophisticated examples within departments B and D. Department D module web spaces had a consistent structure and layout in line with the majority of university guidance, whereas other department e-authors had taken a less corporate and more creative approach.

Having discussed the review findings in general, each department review will now be elaborated on in greater detail.

5.1: Department A, year one module review.

Within department A, each first year module was delivered over an academic semester on a predominantly weekly basis. One module in the first year of the healthcare programme was reviewed, which aimed to give a general overview of the healthcare programme topic and role of the practitioner from a historical to a current perspective. The brief introduction provided no guidance as to how to use the module web space, and made no reference to the existence of a discussion board. The homepage contained a link to a Microsoft Word document containing a week by week list of module session titles, teaching methods and direct student / lecturer contact hours. All sessions within the module were designated as face-to-face sessions (some containing evidence of class based group work as a learning strategy) with no specific sessions dedicated to out of classroom e-learning. A further link provided access to a module handbook which contained no reference to e-learning or online guided study, despite the web space being authored within the context of prescriptive university guidance that distinguished between e-learning and online guided study, whereby e-learning was considered:

> A session where the content is delivered online via module spaces or other electronic means. It can be completed either at home or using the university IT. There is no formal class attendance but a named lecturer will be available to answer questions over the phone/by email. Learning will be consolidated at the next face-to-face session.

As opposed to online guided study, defined as:

> A session where the students are given a topic or subject area to research either independently or in small groups based on specific learning outcomes. This might involve completing a worksheet, putting together a presentation or some other activity. For a non-attendance session learning will be consolidated at the next face-to-face session. If completed as an attendance session the students will normally be given the opportunity to present their work and get feedback as part of the session.
>
> (University guidelines for module space content, 2011, p. 6)

From the above Faculty definitions, it might be concluded that this module did not utilise e-learning in the format expected by the university; however, the module space layout met other university guidance expectations for aspects such as the availability of module leader contact details, links to the module handbook, links to assessment

information, and links to relevant content for each session. The module space had no hyperlink to learning support services nor a direct link to a module discussion board from the module homepage, so was primarily a learning resource repository to support the direct contact sessions within the timetable.

Table 5.1 on the accompanying CD therefore identifies the module web space as utilising a knowledge management, pedagogically neutral learning resource approach. There was no directed interaction with the resources posted online and no further e-tasks or reflection suggested. Students were not expected or encouraged to use the discussion board in order to learn communally from each other, and there was no evidence of e-moderation by educators. The module might however, be defined as partly 'learner controlled' because the student could choose which materials to access, in what order, and when; with no ability for educators to monitor how the learners were utilising the learning content. In keeping with faculty guidance, the module web space was structured as a linear learning experience, with the student expected to access 16 of the 21 session support materials chronologically as the module progressed. The session pages contained the related class based PowerPoint slides and often further resources such as an external website or some posted reading material. No guidance on what a student might do with the website information was provided online, with the majority of materials being text based information for further reading. Despite the generally positive attitude expressed by department A educators to interactive quizzes within the quantitative questionnaire, there was no use of interactive quizzes or periodic formative tests within the module web space and no other strategy to encourage student engagement and interactivity with the online resources or promotion peer online learning. This appeared at odds with the interactive class based teaching strategies that were evident from the corresponding session PowerPoint slides posted on the module web space.

5.2: Department A, year two and year three module review.

In order to gauge if the department A year one module was representative of the approach taken by the programme team throughout the programme, the remaining modules from year two and three of the same programme were reviewed using the above criteria. In year two of the programme however, five of the six compulsory modules did not make use of the module web spaces. The remaining year two module web space is presented in Table 5.2 on the accompanying CD.

There were a further three, level six undergraduate modules delivered within year three of the programme. Two of the module web spaces were unused over the year of data collection, with the remaining module having four of a possible 20 sessions containing online material. The module space contained no introduction, or materials such as the module handbook or assessment guide. The populated session spaces contained Microsoft Word documents relating to guidance notes for directed group work to be carried out in a later class based lesson, plus hyperlinks to healthcare organisation websites in three of the four populated session areas. Unlike year one and year two module authors, the year three author had organised the web pages in topics as opposed to sessions, giving a different (and rather minimalist) presentation and feel to a student's online experience. These findings were suggestive that department A year three module leaders were not engaging in online blended learning to the same extent as their other colleagues (if at all) and this finding was worthy of further exploration later in the case study (See data set three).

The data suggested department A educator engagement in e-learning practice was varied and inconsistent across the small department. The educators who were engaging were utilising the module web spaces in a pedagogically neutral knowledge management strategy, as opposed to a means of promoting a virtual community of practice within its student population. Although some educators had authored module web spaces which followed faculty guidance, and contained some excellent learning resources for the students; many of this undergraduate programme module web spaces were minimally used with differing web space structures and approaches in evidence. Also evident were the widely differing e-authoring and information technology abilities of the respective educators. Comparing the data from the module reviews with the department A educator questionnaire responses suggested a generally positive

educator disposition toward the use of interactive quizzes and exercises, yet their reported use of such strategies appeared theoretical and aspirational rather than in evidence, and overestimated for the undergraduate modules reviewed.

5.3: Department B, undergraduate healthcare module review.

The first year module reviewed aimed to develop a baseline understanding of anatomy and physiology, and promote the use of a biopsychosocial model when considering homeostasis, lifestyle, and environment. The introduction gave an overview of what the student could expect, and attempted to define and justify the use of e-learning and blended learning within the homepage text.

The web space was authored within the context of the same prescriptive university guidance noted in the review of department A; with department B's structure meeting the vast majority of university expectations, however the e-learning sessions designated as a 'distance' alternative to classroom attendance did not provide a named lecturer to answer questions by phone or email during the scheduled time period, relying instead on face-to-face periodic review sessions later in the module.

The wider university guidance implicitly defined e-learning in terms of an individual distance learning experience away from the traditional classroom, yet with no direct reference to online communication. Department B allude in their module web space introduction to aspects of a communication based model, yet there was little evidence this was achieved in practice.

Table 5.3 on the accompanying CD identifies the module web space as utilising an educator-controlled learning paradigm, employing an information management and mixed e-educational philosophy. As noted with department A, students were neither expected nor encouraged to use the discussion boards in order to learn communally from each other, however the discussion board was referred to within the module introduction as a means of accessing help from a tutor. That noted, there was no further evidence of synchronous or asynchronous tutorial support via the module discussion board or Moodle chat room function.

The department definition of e-learning given within the module introduction on the module homepage stated:

> e-learning is therefore a way of facilitating your own learning by actively engaging with online content. The idea being that this form of learning can help you develop to a deeper level whilst also being very flexible.
>
> (Dept. B, module homepage)

The module content made only one reference to use of discussion boards. This occurred during the introduction to a question and answer passage:

> **So will I be on my own if I use e-learning?**
> Simply put - No!
> There is nothing to stop you working in small study groups as you engage in the online content - although you will each have to complete your own workbook. Similarly, you can use the discussion forum of this website to stay in touch with your class mates.
>
> (Dept. B, module homepage)

There was however, no further guidance or requirement for students to work collaboratively on the e-tasks and workbooks within the module, and no evidence that students accessed or engaged in such activity on the module web space. As found within department A, the module might be defined as 'partially learner controlled' only in that the learners could choose which materials to access in what order. The module topics and structure, however, were controlled by the educator as a linear learning experience, with the student implicitly expected to access 30 independent distance learning activities in a top down order and complete at least two activities a week. The activities were not timed, and varied considerably in size and time required for completion; suggesting multiple authors working to an individual, rather than a collective model.

The module may also be defined as a blended learning experience in that mandatory face-to-face sessions were interspersed with online learning to monitor student progress; additionally, several classroom sessions were labelled as optional attendance sessions, whereby the student could choose to cover the topic in the face-to-face sessions, or independently online using the e-materials, or engage in both.

The most dominant educational strategy was educator controlled individual cognitive exercises, interspersed with more constructivist reflective exercises. Cognitive exercises did not necessarily equate to a predominantly instructivist educational philosophy, but more to an educator controlled teaching strategy (Moule 2006; Rusby, 1979,). Often e-learning sessions took the form of step by step instruction such as 'read the (text based) PowerPoint slides, and then explore the (third party) A+P website, before completing the questions in the related workbook, yet still showed evidence of cognitivist and constructivist philosophical underpinnings in the method of questioning and level of reflection required of the student. The main means of interactivity was through text based information with some short videos and use of two structured workbooks containing multiple tasks such as labelling of diagrams or short reflections on a topic. There appeared to be a wide range of academic level provided by the differing third party web based learning resources offered to the students, such as a GCSE level anatomy site for schools, followed by an American university open source site exploring attachment theory more akin to academic level six or higher.

5.4: Department B, second year module review

The second year module was chosen as it focused on a differing aspect of the undergraduate healthcare programme to the year one module reviewed and was authored by a separate team of educators. The aim being to gain a broader view of department B's approach to e-learning.

Within the second year module, a significant attempt was made at providing a range of useful information and guided study exercises to replace direct student /tutor class contact. The module space appeared to use a mixture of constructivist (anchored instruction scenarios) and behaviourist (labelling of diagrams) approaches. Student engagement was predominantly independent effort in nature, with a single attempt noted at engaging students over a discussion board during one session. There appeared to be an unclear e-pedagogical model in use; for example several of the guided study sessions directing the student to read an article by clicking on a hyperlink, but then giving no further instruction or guidance as to the relevance of the information, or what the students should do with it.

There was clear identification within the timetable as to which sessions were class attendance (n =24 sessions) and non-attendance (n=9 sessions) for which independent guided study session content was provided. Non-attendance sessions did not appear to follow a set delivery pattern or timeframe, and may have been timed as a result of other factors such as room availability as they differed during previous incarnations of the module.

There was evidence suggesting not all e-learning authors were fully competent with authoring to the site (session 24 of 30 being out of order and sitting at the bottom of the site, a test paper link not working, and some misaligned content on the introduction page). Additionally, the style and formatting of the session pages varied dependent on author.

Student interaction during guided study predominantly took the form of individual exploration of learning resources with only one session attempting to engage students in an online discussion; however, once the link was pressed the student was taken directly to the discussion board thread, which contained a very brief opening statement from one educator and no further postings by tutors or students. Worksheets and exercises were predominantly factual in nature. Materials were often not signed and dated by an author, and as such provided no tutor presence or social personality online.

There was a clear attempt to blend face-to-face and online learning through exercises that would be reviewed later in the session timetable. Exercises were designed to provoke reflective thought involving reading a scenario and answering written questions, with the student starting their own Microsoft Word document and saving it independently of the site. Occasionally one author used the text box function within Moodle, which then saved work into the student's electronic portfolio, however, no explanation of the possible use and benefit of this function was given online, potentially reducing the overall learning benefit.

5.5: Department B, third year module review

For the third year module review, again a module authored by a differing set of department B educators was chosen. The module was one academic year long (running across the two semesters and summer period) and divided into 16 days of content delivery, with each day split into morning and afternoon sessions, with a non-attendance directed study equivalent for 8 of the 16 contact days.

The module introduction identified the module as a blended learning module, giving an explanation of:

> 'This module is delivered by a blended learning approach which means that you will attend the university for some sessions and the other sessions you will access online through this module space'
>
> Dept. B. 2nd year module introduction

Specific module teaching session content was then identified as 'non-attendance' sessions within the module timetable, uploaded as a Microsoft Word document and interestingly labelled as 'Directed Reading Sessions', again further strengthening the implicit independent study model of learning. There was a student-centred approach taken, in that four different articles and short videos relating to the same topic were offered with the explanation that the intent was for students to choose the article style that best suited their reading and learning preference. The module was delivered on differing campuses, employing the same timetable; yet with differing non-attendance sessions identified depending on site of delivery. Despite these variations in session delivery strategy, there appeared no explanation to the students or change to affected session learning outcomes or corresponding online module information.

The module therefore followed a similar information management strategy to previous modules, in that some excellent learning materials were housed within the site; however, despite vague references to the contrary, there was no actual use of discussion boards or facilitation of online communication between groups, and students were expected to self-manage information provided in a module online repository. (See Figure 5.5 on accompanying CD).

There was an expectation that students would access Microsoft Word document based exercises during the non-attendance days during that scheduled period, with the

document being restricted to access during those periods. This was a very different approach to other modules within the same undergraduate programme. There was negligible guidance on the web space for any of the exercises or text based scenarios placed on the site. This suggested that guidance was given in the classroom and that the blended learning aspect of the module was in addition to, rather than designed into the teaching and learning strategy.

The module team had placed an impressive amount of useful resources onto the module web space, plus taken the time to individualise some material for each of the four separate campus sites. However, due to the large amount of material available to the student, the overall structure appeared confused in some sections.

5.6: Department C, undergraduate healthcare module reviews

The first year module chosen for review within department C aimed to develop knowledge and application of assessment methods, models and theories relating to the profession under study. The module sessions were designed as 14 sessions of 4.5 hour class attendance days, with no sessions specifically dedicated to non-attendance or online learning. The module web space followed the standard Moodle template with links to a programme timetable and module session timetable clearly displayed on the home page. An inserted hyperlink to a Microsoft Word document outlining the scenario for the final module assignment was also provided, however no further explanations or instructions were provided throughout the module web space for other materials, which gave the module space a feeling of being an information repository, rather than an interactive learning environment.

The module handbook was accessed by a hyperlink at the top of the web page, and complied with all faculty guidance requirements, however the handbook did not contain information or an introduction to the use of the module space or any specified approach to e-learning. This first year module web space was therefore a useful, clearly designed ‘light touch’ information repository to support class based education.

5.7: Department C, second year module review

The second year module aimed to identify the complex ethical issues facing practitioners and the theoretical base that informs decision making within the profession. It was structured as 45 hours of direct student and lecturer contact sessions, which were divided up into two consecutive days of delivery over five weeks. The structure of the module web space and topic headings matched the delivery order of the face-to-face sessions exactly and each topic block contained a PowerPoint slide and accompanying further reading for each session. Students were encouraged at the top of the web pace to download the PowerPoint slides for ease of note taking and prepare for each classroom based session by downloading and reviewing the pre-reading material.

As with the first year module, the approach taken to what is described as a blended learning module by the web space author was strongly one of an information repository, with minimal use as a communication portal using the 'news' function for the author to place an information notice on the module web space. The notices were then simultaneously emailed to each learner in the cohort via their university student email account. The newsfeed function was not, however, used as a two way method of communication, with the module leader recommending the students email individual queries or requests for help. Furthermore, no other part of the module web space was used to engage in online communication or discursive engagement with or between students. The well-structured and well-presented site however, efficiently supported the delivery of traditional student/tutor contact sessions. All classroom taught sessions had accompanying learning materials on the module web space, with evidence of currency in the materials uploaded. (See table 5.7 on accompanying CD).

5.8: Department C, third year module review

The final department C module reviewed aimed to consolidate learning to date and debate policy and practice relating to the professional vocation under study. The module sessions were designed according to the posted module timetable as nine sessions of 4.5 hour class attendance days, with one directed learning session; however, the directed learning session appeared to have changed to an external speaker

several weeks before, which the students were informed of via the module news feed function.

This module web space author attempted to go beyond other department C colleague practices in that the web space served as an information management site (as opposed to an information repository) in support of the traditionally taught sessions. The module leader made wide ranging use of resources that included external internet web links and media reports, plus pertinent documentaries. The author appeared to be trying hard to engage students in a range of information technology supported innovative exercises, such as a reflective exercise on a class based debate, whereby the answers were simultaneously recorded in the student's e-portfolio, plus a poorly engaged with attempt at setting up a student group blog on a hyperlinked television documentary. There were however, several failed links on the site to both URLs and 'YouTube' video feeds, and changes made to the order of delivery of certain sessions due to issues of room availability were not reflected in the site structure. Most enlightening of all were the newsfeeds reporting that due to low student participation, the blog would not be continued and considered a *'valiant failure'* and thanking *'those very few brave souls who participated'.* No other communication tools or discussion boards were used.

5.9: Department D, undergraduate healthcare module reviews

The year one module reviewed aimed to introduce the major areas of subject research and debate. The module web space followed the standard Moodle template and had links to a module session timetable, module handbook and an information technology supported assessment strategy. All were accessed through in-text hyperlinks embedded within the introductory module overview on the web space. The module sessions were designed as 25 sessions of two hour class attendance, with no learning sessions dedicated to non-attendance or online learning on the timetable. However, from the onset the module handbook explained that the online module web space material was an integral part of the module learning and teaching strategy and formed a significant part of the final summative assessment of module learning outcomes.

The module learning outcomes incorporated IT familiarisation, with assessment directly linked to four online tests, made up of 10 multiple choice questions and a 250

word short answer question paper, the answers to which were uploaded to each student's e-portfolio as a personal record of completion. Each multi choice test assessed one topic area within the module. Instant feedback of results following submission was not provided, as the marks received for each test built toward the final summative module mark. The tests were placed online for students to take for a one week period (being time restricted to two hours from starting the test and allowing one attempt only per session). This level of use suggested a greater technical ability or willingness to use more complex VLE functionality than seen in other department module reviews, and a greater acceptance of online summative assessment.

Clear guidance was given on how to use all learning resources on the module web space along with advice on printing lecture PowerPoint slides prior to attending class in a three slide per page note taking format. Information was also provided within the module handbook on how to electronically submit the written assignment coursework, which was a requirement of the module assessment brief, along with guidance on accessing and completing the periodic online multi-choice question and short answer test components. Furthermore, within the first introductory lecture, the student was introduced by PowerPoint slide to a key textbook for the module, the purchasing of which allowed a student access to McGraw-Hills own online learning platform and e-learning resource centre entitled *LearnSmart*.

From the onset, the module web space suggested it was an integral and interactive part of the learning experience. It also included the staff and student evaluation of the previous module delivery with reporting of any changes made as a result of previous student feedback. Despite reaching level two on Moule's e-learning ladder (Moule 2006) due to the use of interactive learning media and assessment tools, the module web space remained however, an engaging information management resource for class based lecture notes, PowerPoint presentations, and further (albeit essential to the final assessment) additional reading. Students were encouraged to engage in interactive programmes, yet there was no use made of discussion boards or attempts to use the module web space as a means of interactively communicating between students or student and educator. Educators used the news function to transmit messages such as submission date reminders or class topic changes to the students as a group, but this

was more as a convenient form of group wide electronic messaging than a focused attempt at building an online community of learning.

5.10: Department D, second year healthcare module review.

The module consisted of 20 x two hour weekly taught sessions. All sessions were classroom based, with no session being identified as directed learning or online learning. The brief module web space introduction provided the aims and objectives of the module explained the web space would be used extensively throughout the module and encouraged students to access the site regularly, yet did not describe the module as blended in format. Due to the nature of the content of this module a caution that some topics may prove upsetting for students and an offer of alternative tuition was given should a student feel they may be adversely affected by the lecture topic and delivery format. Lecture attendance was therefore not compulsory, but was strongly advised and monitored in relation to summative assessment success.

The news feed function was used most weeks by the module leader in order to remind the students of the following weeks lecture and direct them to any pre reading or preparation exercises required. Of the 42 information postings given over the one year data collection period, no replies were expected or received from students. Therefore the approach taken by the department D web space authors was again an information repository to support the class room based taught sessions, yet with acknowledgment that students may wish to engage in just the online materials in order to more independently meet the module learning outcomes for some, if not all, of the topic sessions. Interestingly, despite the formative assessment strategy containing group work elements, no use of university online communication or discussion boards was evident; however, that is not to say that students and educator did not engage in direct email communication, as that aspect of information technology was not open to the researcher to scrutinise.

5.11: Department D, third year module review

The final module reviewed was structured as 21 weekly two hour 'traditional' class room based sessions, with the aim of consolidating biological learning relating to the professional vocation under study. The module web space was structured as 15 separate topic blocks containing up to two associated lecture PowerPoint slides and notes, plus additional reading and external website resources. The web space structure also contained four topic blocks dedicated to examination preparation and revision, and one block dedicated to internet based third party learning resources such as open access textbook companion websites.

The classroom lecture schedule and layout of the module spaces were therefore not directly comparable, meaning the students were not expected to chronologically follow session delivery with the materials available on the website. Although students were encouraged by the module web space author to 'immerse themselves in the materials at every opportunity', no discussion board was available within the module web space to facilitate dialogue on the materials; although encouragement for students to set up their own external online learning groups was given in the module handbook.

From the information collated in Table 5.11 on the accompanying CD, it can be seen that the module web space author was non-controlling in her approach to student engagement regarding module learning resources and web space. Students had full control over how and when they managed the information available to them, including the option to substitute class lectures for independent study using a variety of online materials. The author did not attempt to engage the student in interactive exercises or guide learning in relation to time spent engaging, and despite some encouragement to work in groups, engagement appeared a very individual activity whereby students were not required to communicate or collaborate online with peers or facilitators.

5.12. Summary of data set two – module reviews

This section reviewed one module from each year of the key undergraduate healthcare programme within each department considered by the head of subject as central to their undergraduate healthcare delivery. The review criteria aimed to identify underlying pedagogy or delivery strategies, plus the level and form of interactivity present within the module space. This was to allow comparison to data from study phases one and three during the thesis discussion. In keeping with the findings from the data set one questionnaires with regard to definitions of e-learning and blended learning, the modules were structured primarily as information management repositories (Davenport, 1994; Ritchie, 2011) rather than hubs for supporting the communication for an online community of learning (Gallagher-Lepak, et al., 2009). Teaching strategies appeared predominantly educator controlled across all four departments, which triangulates with the findings from questions 5 and 6 as to educator and student preferences. Underlying pedagogy was a mix of cognitive and social constructivist approaches, which due to the high level of educator control maintained, at times led some exercises to be heavily instruction based. The mix of approaches presented both opportunities for limited student centred delivery and choice of engagement, and challenges for clarifying expectations of active or passive student engagement and instructional alignment.

The next chapter will report on the thematic analysis of the qualitative data received through semi-structured interviews with educators and focus groups with their students.

Chapter 6: Qualitative Data findings

This Chapter reports data set three relating to the deeper qualitative data component of the case study. The data set consists of two distinct data collection processes:

- Sixteen semi-structured interviews with educators from each case department
- Six focus group interviews with students from each case department

The data from both components were analysed using Braun and Clarke's (2006) inductive thematic analysis model and organised using NVivo software which proved useful in efficiently moving and structuring identified text into codes, categories and themes.

6.1: Thematic analysis

Figures 69 to 71 represent the finalised three themes with their associated categories and codes. The word 'parent' denotes the theme or category a code supports, for example Theme 1 is a parent of the code blended learning, which itself has the sub-code distance learning within it.

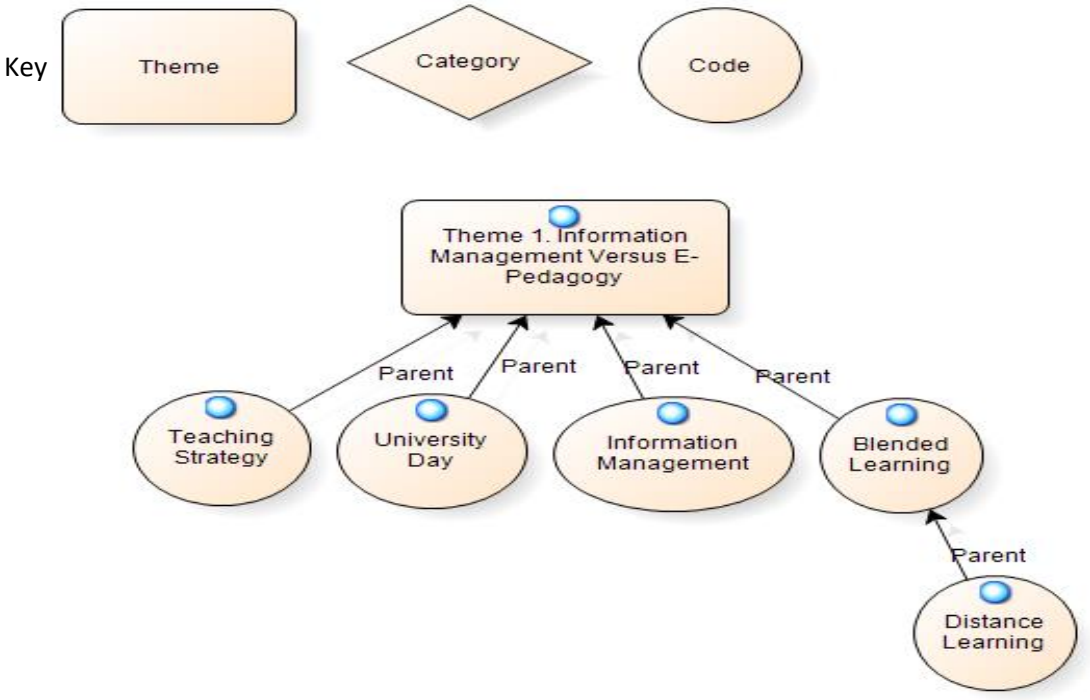


Figure 69: Theme 1 map

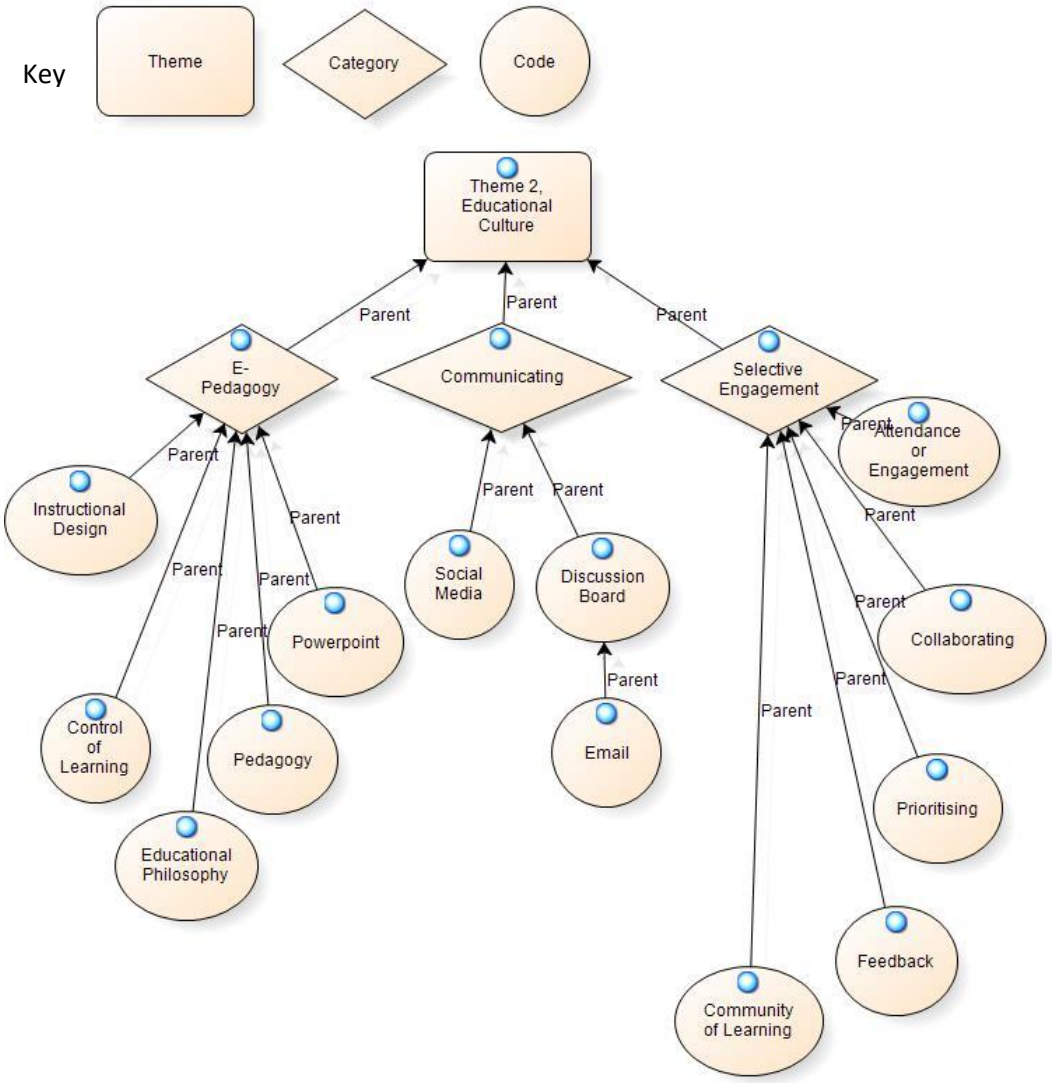


Figure 70: Theme 2 map

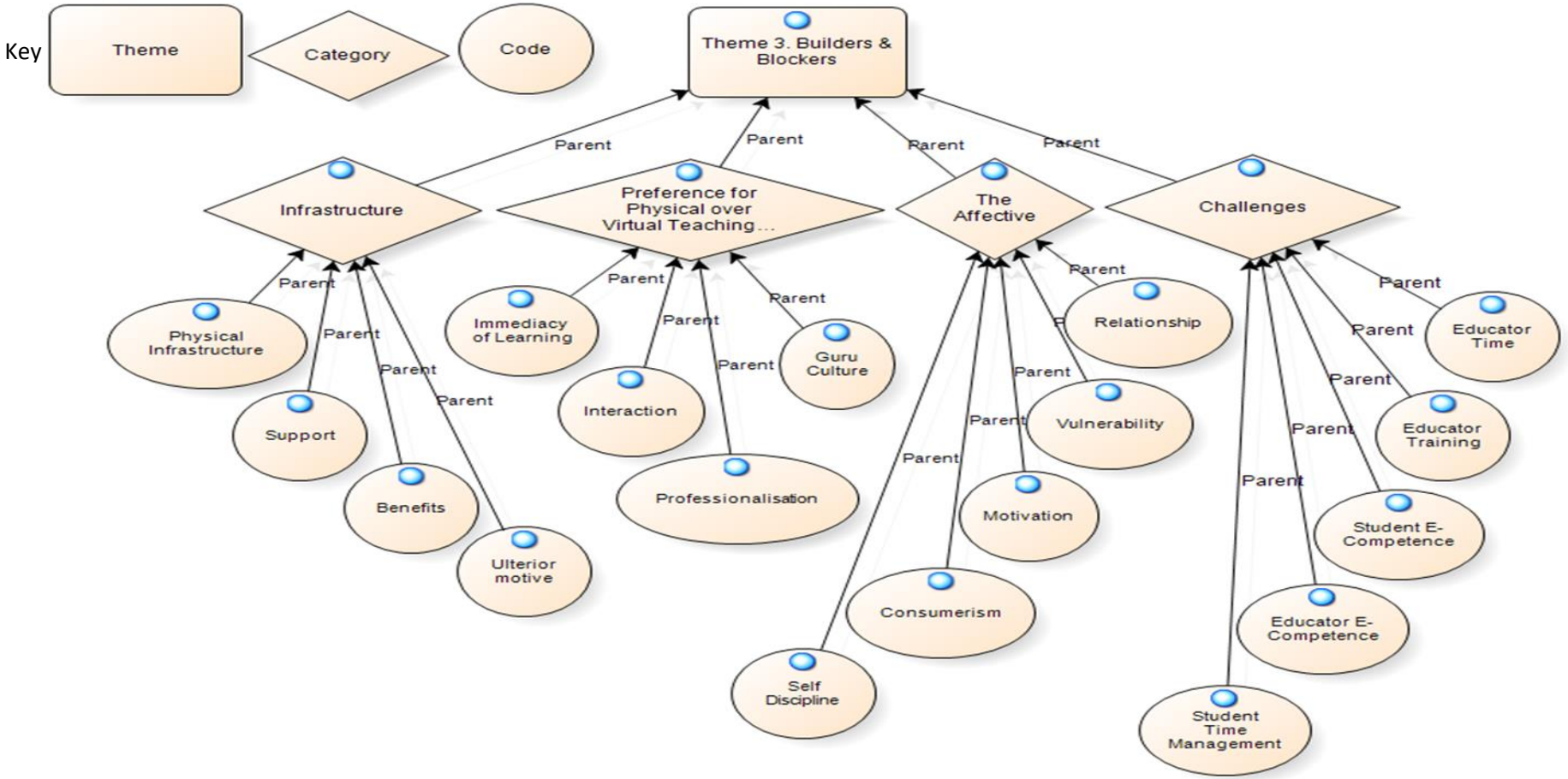


Figure 71: Theme 3 map

6.2: Theme 1: Information management versus e-pedagogy

This section reports the findings collated under the theme of *Information management versus e-pedagogy*, whereby codes were identified under a single category of differing (often implicit) definitions. The key finding within this theme was that little faculty agreement of terms such as 'e-learning' and blended learning existed across and within all four departments. The theme contained a single category named shaping the definition, with the term *definition* used to describe how the respondents conceptualised e-learning and articulated its meaning and intrinsic aspects.

Five codes supported the findings, which will now be reported in sequence.

6.2.1: Category 1. Shaping the definition

(i) The university day

The concepts and resulting definitions of e-learning held by the educators and students across the departments were framed within the context of an existing standard university teaching and learning day separated from evening and weekend time periods. Students and educators both made a clear distinction between weekday daytime university attendance, and evenings and weekends which were seen as additional time periods. This was an important distinction for many respondents, as it clarified the existence of student ideas on time periods they expected to be engaging in programme learning, and other time periods which remained their own and within which further learning was considered additional effort. A similar concept of contracted and personal time also existed for educators. There appeared mixed views on whether the flexibility of e-learning was seen positively as an efficient and flexible way of working, or negatively as an excessive expectation of workload and/or intrusion into personal time. The following quotes were indicative of opinions expressed by students and educators in all four departments.

> *You're willing to commit your time more when you're in university, we know when we come here we're in from what, half nine 'till two, three o'clock basis.*
>
> (Dept. B/ Student Focus Group 2, St3)

> *I mean with the e-learning you can do research from, you can do it at 6pm you can do it at two in the morning. You've still got the same*

amount of access to that information and it really sort of helps you, especially if you're doing it at a certain time.

(Dept. D / Student Focus Group, St4)

Students live in this…as irritating to my mind is described is 24/7 society…erm..this instant messaging society..erm..you really have to manage their understanding of the fact that..erm..no I am not available to answer your emails at 2 o'clock on a Sunday afternoon because sad as I am, I do actually have a life of my own thank you very much.

(Dept. D/ Academic 1)

The implicit concept of 'normal' university time, as opposed to 'additional' time shaped further definitions such as blended learning, which for some educators and students relied on utilising the students extra curricula periods. However, as also identified in the questionnaires for educators and students, both positive and negative views were expressed when terms such as flexible working were perceived as additional work, an example view being:

There are some videos and things on there that are really useful, and that we can just watch and then chat about later, or take notes. I like that and see the value of that, but it should be on University time, not extra, cos there's so much going on that you won't get round to it properly if you are having to do it all in the evenings when there is just too much .

Dept. B / Student Focus Group 3, St4.

(ii) Information management.

Across three of the four departments explored, a lack of clarity existed regarding defining e-learning in terms of pedagogically neutral information provision, used primarily to support class based learning, and e-learning as pedagogically underpinned online communication and discussion which replaced the physical classroom. Responses that evidenced this finding included:

People's perceptions as to whether it supports or replaces learning do differ, I do think that even after all this time, people don't fully grasp what e-learning and blended learning is all about.

(Dept. B/ Academic3)

As an institution my own view is that we haven't really clarified. Are we talking about e-learning frees lecturers up to do other things? i.e. is it e-learning that replaces a lecture or is it always in support of that lecture and its electronic resources as I think we tend to use and we've not really qualified it and different people do different things with it...and we very much felt to go down the session support route with online, as that was e-learning for us.

(Dept. D / Academic 2)

Departments A, B, and C students and Educators predominantly conceptualised e-learning in terms of an individual working at a computer, usually for a protracted period of time away from the university campus and classroom. Within department B, e-learning was operationalised in terms of student 'private study' incorporating completion of computer-based guided study tasks such as article reading or entering answers into a workbook designed by an educator as an alternative learning experience to a taught classroom session. Within this conceptualisation of e-learning there existed an inherent, although poorly defined notion of distance learning with a required e-pedagogy. An individual as opposed to collaborative based teaching strategy was justified by the educators in terms of facilitating flexible working and improved time management for the student when engaging with online materials:

> ***So you've not tried a synchronised session?***
> *No, it's just the... I mean you're taking away that lovely flexibility which is one of the strengths of e-learning, by doing that aren't you, you're kind of... taking away one of its advantages by doing that.*
>
> (Dept. B / E-learning Coordinator)

Department D educators appeared in greater agreement that their use of e-learning primarily followed an information repository and information management model to support classroom teaching, and considered the use of module web spaces to encourage virtual communication by students as unnecessary for a full time attendance programme, typically commenting:

> *And they've moved, they've moved here. They live on campus. Why...why would they want to ... sit in their little rooms when they can get together on campus?*
>
> (Dept. D / Academic 2)

For department B students, online interaction was also defined and experienced as interaction with a computer based activity designed by the module author, along with consideration of streamed video clips in class as opposed to discursive interaction with student colleagues or tutors on a topic via an online discussion board, typical descriptions were:

> *Going home and doing your own research. ….A way of, sort of, continuing on the lesson I suppose and building on.*
>
> (Dept. B / Student Focus Group 1, St4)

> *Well it means that you work sort of online or they say oh you can access this and you can do further work on it online.*
>
> (Dept. B / Student Focus Group 2, St6)

E-learning pedagogy which attempted to engage students in learning through discussion boards or chat rooms was not mentioned by students from any department unless specifically asked about, further supporting the definition of e-learning within the department programmes as an information management resource, designed to be utilised by an individual at a personal computer.

Although department D educators and students acknowledged that e-learning has many differing facets which include hardware such as mobile phones and other electronic media, department D educators considered a communication motive for the use of e-learning as distinct from their required teaching strategies, and unwarranted for a full time course where many of the students live on or near campus:

> *It's a different process you have to write the materials very differently, almost like text books.*
>
> (Dept. D / Academic 2)

Having been actively encouraged by the head of department to engage in departmental discussion on the potential use of e-learning, with each educator being required as part of their personal development reviews to undertake the internal university delivered short course in TEL, department D appeared distinct from other departments in demonstrating a deliberate consensus view on an information management approach for full time undergraduate students. Department D /Academic 3 articulated this view when commenting:

> *I think we would be fooling ourselves if we claimed to be any more sophisticated in our pedagogy, but actually, we've decided we don't have to be online because of the approach we have adopted.*
> ***One of information ……***
> *Yes exactly. The students have a responsibility to attend the class, and then review the materials we provide. If the materials work for them, great, if not, come back and see me.* (Dept. D / Academic 3)

As with department D, department A appeared to have a greater consensus view of e-learning than departments B and C, again based on an information management format. However, this consensus formed more informally following negative feedback on an attempted e-learning module delivery format. As a result, department A appeared to make an internal, and somewhat covert programme team decision to return module e-learning sessions that pedagogically facilitated independent achievement of learning outcomes back to the classroom. Such classroom delivered topics were then supported, as opposed to delivered by the materials on the module web space, which as noted in

Chapter 5, took the form of additional information hyperlinks and supportive reading materials.

> *I'd say the team has gone its own way and reverted back to more face-to-face teaching, and we've done this almost guiltily, but we shouldn't feel like that. We should be able to discuss it openly and decide to do that as professionals....Well its ... it's a mix really, but in truth, for us, it's now in support of classroom teaching. I know the University would want to see full online sessions, and we still do the odd one when it suits, but we now mainly.... because of the student feedback, we now mainly put additional learning on the module space as further reading.*
>
> (Dept. A / Academic 3)

The educator approach shaped the way in which department A students viewed their e-learning engagement, which revolved around information retrieval, timetable management, and email contact with tutors. During the focus group discussion, department A students suggested a positive attitude to their module spaces, viewing them as a useful adjunct to their learning, and confirming use of the module web spaces for information management and personal research, for example:

> *You use it basically to, you know, download presentations for our lectures, emails, links to other areas for research and things like that.(St3) I know at some of the universities I've heard that they actually do their kind of lessons, I guess, online. Like they'll log in and it will show that they have attended, if you like, and they can do it at home but they complete like the PowerPoint or whatever it is but we don't really do that here. All our lessons are here (indicates classroom), unless we have directed study which is maybe a bit different but they are all here and we just access the PowerPoint on the portal. But we can access emails and, you know, we can contact the library through there for, you know, for reserving books and things like that, all that kind of thing (St1).*
>
> (Dept. A / Student Focus Group)

For all four departments, the overall implicit definition of e-learning therefore involved information management as opposed to pedagogical use of online communication.

(iii) Blended learning

Definitions of e-learning also incorporated the notion of linking classroom based study with pre-reading and post classroom study. This was most clearly articulated by departments A and D and constituted their view of the term blended learning; however, for departments B and C, the use of classroom based review and educator feedback on directed or independent e-learning by students was also a key feature of how they defined blended learning. departments B and C educators appeared unable to articulate a consensus view on this approach however, with narrative suggesting a lack of clarity and some disagreement as to how to operationalise the 'blend' in practice.

> *I don't think I've ever tried to define it, and I don't think the people I work with have ever tried to define it; and from the students perspective, they say 'are we in or aren't we?'*
>
> (Dept. B / Academic 4)

On closer exploration, definitions of blended learning varied further, with one definition of blended learning meaning a mixture of learning activities and learning environments, as opposed to simple alternating of delivery method between the classroom and the computer, for example:

> *...a combination of many types of learning including lectures, demonstrations, skills practice, e-learning and simulation usually delivered in an online form or as a face-to-face or seminar and tutorials.*
>
> (Dept. A / Academic 1)

Student focus groups across all four departments suggested students appreciated varied content delivery methods, such as video clips within a lecture and 3D modelling within anatomy learning materials online, yet students had little understanding of aims and objectives of blended learning. None of the students within department B focus groups one and three, or the department D focus group appeared to have heard the term 'blended learning', yet their narrative suggested acknowledgment of the benefits of alternating classroom delivered education with pre- and post-reading online. Without a clear understanding of the overall aims and learning strategies underpinning their blended learning module, when asked of their understanding of the term blended learning, department B student focus group two identified department B's e-learning delivery model as one of unsupported study. This appeared to be due to an alternating online and classroom delivery structure which required the students to engage in online materials as an independent learner first, then attend class for consolidation of that learning, as the extract below illustrated:

I would like to always have a lesson, and then follow that learning with further reading and the e-learning to consolidate and go further with your learning, not start out with reading stuff I've not been introduced to (St3) Yeah, I think it should be combined more with face-to-face contact. On its own, it's not enough really, but combined with a tutor saying, right, let's go through this (St2).

(Dept. B/ Student Focus Group 2)

In addition to the mixed views expressed by some students, the mixed concepts and definitions held by educators appeared to produce negative feelings and disagreement on teaching strategy across module teams, for example:

Yeah and it was e-learning and that was where we took it and still do... and I was told, sort of like... afterwards, you know it's more than that, e-learning, it's using your whole module space to be able to guide students, you write a blurb sort of like, and I thought well we do that anyway, but it's more than... it's more than that, and I said oh ok, well I've never used it, but any more than that.

(Dept. A / Academic 2)

This was most notable within department B, where one undergraduate programme team had been actively attempting to use blended learning as an alternative form of content delivery.

We start too early in the programme to say , Erm you're not in, the works on Moodle.

(Dept. B / Academic 4)

The same finding is also present in department C,

I think my colleagues, the ones I've looked at, it's replacing face-to-face, which is an interesting point, because for me, e-learning should be about supporting the teaching

(Dept. C / Academic 2)

In contrast, although various approaches to authoring e-learning materials existed in department D, the department appeared to have benefited from the greater discussion, pedagogical training, and stronger consensus on a departmental approach in comparison to the other departments. Although this greater pedagogical understanding led department D to a blended learning model more in line with information management principles, it also resulted in their ability to agree, rather than question, any remaining differences within the agreed model:

I would not go as far as to say it's a completely agreed or single approach across the department, but we have tried hard to decide exactly what role we want information technology and the module spaces to play within the programme.

(Dept. D / Academic 3)

We all have different approaches and tolerate that difference because I think the students quite like a diversity. And for people to choose the approach that they feel works both for them and for the material that they've got to teach...We're...Yeah, instead of all having a homogenised approach.

(Dept. D / Academic 2)

(iv) Teaching strategy

A key factor which shaped the educator definitions of e-learning was the supporting teaching strategy. A strong focus on professional competencies was found to exist within departments A and B, and appeared to lead educator respondents toward an e-pedagogy underpinned by differing philosophical approaches to education. On the same module web space containing examples of constructivist shaped exercises, there also existed behaviourist style learning activities in which the pedagogy appeared to firmly control how the student would learn, and relying on replication of behaviours (such as labelling of diagrams) and transference of knowledge from educator (in the form of onscreen text) to student, as noted within narrative such as:

I personally like it, however not for covering emergencies and stressful topics as that needs a face-to-face and 1,2,3 step by step approach

(Dept. A / Academic 1)

Yeah.... the modules that I've looked at, and ones that people are quite proud of, are very instructional.... Individuals working through tasks, guided study, go away and do, come back next week type of approach

(Dept. B / E-learning Coordinator)

By having this very patriarchal 'I'll tell you all you need to know, come and listen approach, we are just giving them, we are stopping them learning how to think. (Dept. B / Academic 2)

A focus on professional competencies did not appear within the narrative of department D educators, with the educator and student discussion suggesting a greater acceptance of independent learning and choice of when, how and sometimes whether students would engage in theoretically focused lectures and supporting module web space resources, as evidenced by quotes such as:

If I haven't come to a lecture I'll definitely just go off the lecture timetable. I mean I know sometimes it depends what lecture it is… but they'll just put brief notes and then go to a lot of depth in detail during the lecture. But some lecturers just read off a slide. So I think if you do go to a lecture and think "Well this isn't really benefiting me" I won't go next time. You just think "Well I'll just go off the slides then".

(Dept. D / Student Focus Group, St1)

6.2.2: Summary of theme 1 findings

This section presented findings under the theme of *Information management versus e-pedagogy*. The theme codes were collated within a single category focusing on the differing factors affecting the way in which educators and students within the four departments conceived and defined e-learning. The theme evidenced the lack of a consensus definition of e-learning or common understanding of terms such as blended learning across three of the four departments studied. Across the four departments e-learning practices had formed into a predominantly pedagogically neutral information management model to support existing student learning, along with the presence and desire within departments B and C to develop pedagogically underpinned e-learning to directly substitute for classroom teaching. The blended learning models identified did not make use of communication tools such as discussion boards or social media. Some educators appeared ill at ease with associating e-learning strategies with existing behaviourist and cognitive teaching strategies aimed at ensuring professional competencies. Although students presented positive views on e-learning resources and module web spaces, without strong guidance and support mechanisms, pedagogically driven attempts to develop student-controlled and active e-learning in place of more passive classroom learning were sometimes viewed negatively by students. This approach appeared not to match some student and educator behavioural characteristics and beliefs, and the issue of educational culture formed the second theme drawn from the analysis.

6.3: Theme 2: Educational Culture

Theme 2 considered *how* students and educators engaged in e-learning. Educators interviewed tended to author e-learning materials which were predominantly educator-controlled in pedagogical approach. Within the narrative of departments A and B, and to some extent department C, when exploring how e-learning resources were designed and utilised, there existed repeated references to online teaching approaches which were non-social, non-communicative and directed by the educator, and so less in keeping with an overarching social constructivist educational philosophy, and more akin to cognitive constructivist and behavioural educational philosophies.

The theme contains three categories, named *E-pedagogy*, *Communicating*, and

Selective engagement; which group and focus the findings within the theme. Eleven codes supported this theme, and these are reported in sequence.

6.3.1: Category 1. E-pedagogy

(i) Instructional design

The variance in concepts and definitions of blended learning and e-learning noted in theme one, resulted in differing aims for the use of information technology and in varying models of instructional design seen within the module web spaces. Student narrative was consistently positive with regard to welcoming the twenty four hour access to a range of additional learning materials and information search facilities. Educator attempts at developing a student e-learning experience to replace a previously taught classroom session by using a pedagogically neutral information management structure however, resulted in some students being presented with an information repository in place of a previously taught classroom session, with little or no guidance as to what the student should do with the materials.

> *I think more structure would help people to use the site itself.., but… (St2)*
> *Yeah, I think that was the problem people were having because it was not structured and people were saying I don't.. literally, well I don't know what I'm supposed to be doing (St3).*
>
> (Dept. B / Student Focus Group 1)

A similar picture was noted during the department C student focus group, where the access to high quality e-learning materials was praised, however, students expressed frustration at inconsistent expectations of their educators as to whether the tasks completed online were to be submitted for review and feedback.

Students from department A and all three focus groups within department B described use of extensive workbooks containing structured e-learning tasks which were highly prescribed by the educators, with tightly controlled completion time periods. These tasks included labelling anatomical diagrams and answering multiple choice questions, and predominantly focused on students providing answers which can be judged as correct or incorrect.

> *Yeah, 'cause the workbooks that we went through were fifty pages maybe? (St3).*
> *About fifty pages, and we had to – (St2)*

And they'd say right we'll just go through the psychological and sociological ones and they, they'd say these are the answers you should, you should be getting....(St4)

(Dept. B / Student Focus Group 1)

This highly educator controlled instructional design was most evident in a particular module within year one in department B, and a similarly focused module within department A. The somewhat instructionist approach contrasted strongly with other approaches to authoring e-learning materials in concurrent programme modules. The educator narrative highlighted differing views on e-pedagogy and online teaching strategy within some module teams, as evidenced by the next code in relation to the use of PowerPoint slides as a means of online content delivery.

(ii) PowerPoint.

Educators made multiple references to the posting of PowerPoint slides originally used in the classroom as replacement online learning material with little or no further guidance for the student. The educator interviews and student focus group data from all four departments suggested students and educators valued the availability of PowerPoint slides as a preparation adjunct to a planned lecture, or as a post lecture reference tool, but were less enamoured with their use as an e-learning exercise tool. The following text encapsulated the key finding of a conflict of views regarding use of PowerPoint slides as a blunt instrument of information giving in place of a previously taught session across department B and C, which departments A and D appear to have avoided:

I mean why put PowerPoints on the module space, they were useless. You know when you read some of the PowerPoints they'd have a blank slide saying class activity when it was… so you could see why the students were getting annoyed by it, and it was terrible, absolutely terrible.

(Dept. B / Academic 2)

But I get so cross when I just see PowerPoints up there cos I know what they've done, they high jacked it from what was a face-to-face session, put it on there.

(Dept. B / Academic 4)

If all you've got are the PowerPoint's and they don't go into any extra detail… you don't get that extra information…

(Dept. C/ Student Focus Group, St5)

> *The process we're at, at the moment is that we've worked with people, we've looked at what they currently have and it may not... it may only be that some people just PowerPoints on line, or pdf files online and that's it, that to them is their e-learning.*
>
> (University technologist)

These statements also highlighted that e-pedagogy and module web space instructional design did not stand in isolation from classroom based pedagogy. Constructivist aligned educators were critical of a perceived over reliance by some colleagues on teaching strategies based on transmission of knowledge and use of PowerPoint during physical teaching across all four departments, which appeared to carry into e-learning practice. The comments were most vociferous within department B, for example:

> *You don't have to pay £45,000 a year to read PowerPoints, ... I think staff like to turn up with their 57 PowerPoint… if you ask people… you can see this from core preps… if you look at core preps, people will have core preps of 57 slides because they want... they… we have the ethos of making sure… the only way to make sure that a student knows everything is by telling it to them.*
>
> (Dept. B / Academic 2)

It appeared that the online use of PowerPoint didactic lecture slides tended to steer some educators toward instruction based online information delivery, adapted as a form of e-information in the absence of an explicit constructivist e-pedagogy.

(iii) Control of learning

In the majority of cases, control of e-learning lay firmly in the hands of the educators, and not the students. Educators in departments B, C and D controlled the sequence in which learning materials, such as identified pre- and post-session reading, were available to the student in keeping with classroom timetables, often updating the materials the week before the classroom session or materials were due to be completed. Educators in department B also attempted to control when students completed specific sections of the online workbook by sequencing the feedback of workbook sessions within the module timetable. Therefore, students were not facilitated to control the pace of their online learning in response to previous experience, but were expected to engage in learning when and how the educator dictated. The reasoning behind this educator approach was frequently justified as 'preventing students from rushing ahead superficially' (Dept. C / Academic 3). However, this approach was sometimes negatively interpreted within the student narrative of departments A and B as 'last

minute' or 'night before' preparation and delivery of materials. Conversely, the same students appeared dependent on their educators and wanted educators to lead their learning, calling for more structure and control within their narrative, as epitomised by the following comments:

> *Structured/ yeah we need structure/… if it's followed up,…. I want the tutors.(group talking together)*
>
> *If we were told you can't leave and to go to the library we would, but we would need the structure to do it (St2).*
>
> Dept. B / Student Focus Group 3

Department A took a less controlling approach by having all module materials available to the student, at all times from the start of the module within a repository format. This produced mixed feelings from their students, with some wanting more structure and direction, and others welcoming the chance to control the pace of their learning, for example:

> *I think when you've got it all there you are kind of always checking where you are up to. But then it seems to me, I feel like when they are putting it up as you go along they are either putting it up the day before or the day after. And it's like "Well, can you not put that up like two weeks before?" So it's a little bit in advance but not too in advance (St1).*
>
> *I don't like the idea of waiting round to be told something. Because if you got on with something quicker than, you know, you should have done, it's nice to move on and have a look and then you can start looking around, researching it. (St2)*
>
> Dept. A / Student Focus Group

Educators who operated from within an educator-centred educational culture appeared to feed student expectation for being 'taught' by a professional expert, as suggested by numerous comments across all three department B focus groups, as well as from students within department A. For example:

> *I want knowledge by someone who really knows what they're talking about rather than me just gathering what I can and trying to make sense of it (St1).*
>
> (Dept. B / Student Focus Group 3)

Where students maintained dependence on educator led delivery of learning, whether an educator within department B used an information management approach which allows the student to access and apply online materials as they choose, or whether the educator designed very detailed instructor led online workbooks, students still appeared to associate high quality education and learning with direct delivery from a physically present expert. Additionally, as noted when considering blended learning,

without explicit explanation and guidance, plus robust feedback processes, students appeared to define the student centred e-learning activity negatively, and as a form of 'self-education' lacking in support from the educator:

> *Yeah there was no element of teaching there was there.... I didn't feel like I'd been taught anything and of course when someone says, oh you know you have to go and do this online but nobody checks you don't do it. Yeah. That's the reality of it isn't it, like? (St4)*
>
> (Dept. B / Student Focus Group 2)

The students within the focus groups therefore presented very mixed educational views on what they considered effective e-learning within their undergraduate education.

(iv) Classroom alternative

Despite there being little evidence of an educator led virtual community of learning to facilitate student engagement and outcomes; as noted in theme one *Definitions of e-learning*, educators within department B attempted to use the module web space learning resources they authored to deliver an alternative blend of content delivery to standard classroom based teaching. This occurred primarily in one of five concurrently delivered modules, with the remaining department B module teams adopting a similar approach, yet with a greater number of classroom taught sessions compared to e-learning substituted lessons. As Dept. B /Academic 2 explained:

> *I was very keen that we didn't start off teaching them (names subject) and then read it online, because I felt like that… that they're not getting anything from that. I felt that what we should do is we should start off with it online, (names subject), supporting them to do it online and then the blended bit came from the consolidation of it.*
>
> (Dept. B / Academic 2)

This approach contrasted with the pedagogy employed by the majority of colleagues within department B, who utilised a blended learning approach which began with taught sessions interspersed with online timetabled independent study, and contrasted with departments A and D's use of module web spaces as support materials to classroom based learning.

department D respondents held firm to the view of e-learning as an information management tool, and considered substituting taught lessons for online alternatives as quasi-distance learning, and unjustified within a campus based, full time attendance course. Department D educator respondents did, however, express mixed views on the situation that students sometimes chose not to attend a class and rely solely on the

online materials instead, with the differing points of view being encapsulated by the following discussion extract:

> ***So it's support to your teaching rather than a replacement of the teaching?***
> *Yeah. But then some people, if they don't come to the lecture, it's also an area of some really rich resource. I mean they don't get the talk, obviously, but they at least get the very comprehensive notes and guides for further reading, so yeah.*
>
> (Dept. D/ Academic 2)

Department C presented more of a mixed picture with regard to the use of online educational sessions as an alternative to class based delivery. Educators described predominantly conventional classroom teaching delivery, supported by information management and online reading materials. One educator alluded to her blended learning containing some standalone e-learning sessions; however, when this session was identified within the relevant module web site and timetable it took the form of online reading materials supported with hyperlinks to interactive 3rd party websites and occurred during a faculty staff education day. Department C students reported they did not find their classroom based experiences to be replaced with virtual delivery in the first year, with minimal occurrences in the second year, as the text below suggests:

> ***So do you get a perception that some of your lectures are replaced by e-learning?***
> *No, not really.*
> [talking over each other]
> *A bit this year, but not in first year.*
>
> (Dept. C / Student Focus Group)

6.3.2: Category 2. Communicating

This category reports findings under the collective title of *Communicating*, with data drawn from three main codes named *Discussion boar*d, *Email*, and *Social Media*. The use of virtual communication tools such as discussion boards, chat rooms and blogs appeared not to be a strong feature of the programme modules reviewed (see chapter five), and the role of such teaching and learning strategies appeared unclear within educator and student narratives as the codes below highlighted.

(i) Discussion board

Department A educators discussed how some of the programme team had attempted to use discussion boards with limited success, whilst Dept. A /Academic 3 elaborated and appeared to question and reject the justification and potential benefits of

communication based e-learning using module discussion boards. The main views within the department are encapsulated within the following extract:

> ***Can I explore some more your views on discussion boards?***
> *Never use discussion boards anymore. The students ignored them, so we switched them off. Email is just as effective. If the students want to share information, they use Facebook or whatever, not the discussion boards. I did try once, but it was cumbersome and stilted. The students said it was often impossible to sign in and so never bothered again. Why would they? We don't use e-learning that requires a discussion board. We can discuss in the classroom. We get them to read articles and reflect on information. We get them to search for information. We don't expect them to discuss anything online, but some do on Facebook, but not with us.*
> ***So do you see any use for a discussion board?***
> *It was used during the interprofessional module, but that was a bit hit and miss and only formative, so not many students engaged as we had hoped.*
>
> (Dept. A / Academic 3)

The department A student focus group confirmed this situation, stating the discussion board was not used in the first year of their programme and rarely checked by them thereafter.

Although some department B educators actively substituted previously taught sessions for online instruction, educators appear unclear as to the role and purpose of online communication. Some advocates of e-learning within department B expressed support for using the discussion boards to share information or generate debate following an exercise or video clip, for example:

> *The other thing that I encourage students to do is I say to them you're busy, you've got this, you've got that, if you find a good article post it on the discussion board, share it, talk about it with each other, so I think people like doing that.*
>
> (Dept. B / Academic 2)

However, there was no evidence of discussion boards being used in this way on the lecturer's related undergraduate module web spaces during the module reviews. Another department B e-advocate appeared to suggest that being available online whilst the students exchange views on a discussion board was also a successful approach:

> *What we do is we have like a DVD that they watch. So it could be something quite controversial like a situation with the people in the learning disability wards that were being abused. So we're online at the other end, obviously. For when we do that we give them an exact time when we're on.*
>
> (Dept. B / Academic 5)

Yet, as with the previous assertion, examination of the Moodle site showed no evidence of this synchronous discussion event occurring, with other educators within the same module team, albeit from a differing campus suggesting the opposite situation.

> *No, I never use the discussion boards. No...erm... we were asked to use the discussion boards when we were doing the (names module) but I didn't find them particularly useful, and I must admit I'm probably just not that way inclined, so I don't.*
>
> (Dept. B / Academic 5)

These statements suggested differing approaches taken in using the same Moodle web space and e-learning materials across campuses which were not reflected within the timetables and other documentary evidence, or possibly an over estimation of discussion board use by some educators within department B.

Corresponding comments from all three department B student focus groups suggested dissatisfaction with module discussion board use and minimal or no engagement from peers when required to discuss a learning topic as part of an e-learning exercise. Furthermore a lack of regular and timely facilitation of discussion by educators within the module discussion board was also noted in the comments of department A, B and C students. Where students had engaged with the discussion board, interaction appeared to be aimed more at proving to the module leader that a student had engaged in the exercise, than constructively contributing to an academic debate, as the following exemplars illustrated:

> *It was just people basically proving that they'd done the work and then the tutor going oh okay that's a good comment there, thank you for that, when actually we were just proving that we'd read it (St1).*
>
> Dept. B / Student Focus Group 2

> ***You mentioned module space. Do you use the discussion boards at all? Is that a tool that you use?***
> *I've tried to, erm, and I've found students really don't engage with that... No! Tried and failed a long time ago. The comments just spiralled down and it became a me too kind of thing.*
>
> (Dept. C / Academic 3)

In addition, discussion board use was noted as alien by the (self-described) 'more mature' department C educators who did not engage in social media, considering it 'too open to abuse' (Dept. C / Academic 1). This contrasted sharply with the educator practices within department D.

The educator respondents within department D noted in the years preceding the data collection for this study that discussion boards rarely contained meaningful discussion and often served as ways of posing questions relating to programme structure and assignment dates. These questions were sometimes answered incorrectly by the students themselves, which the educator then had to correct at a later date when checking the board.

> *And then what happened, the students would reply, possibly with erroneous information and then eventually the lecturer would catch up, possibly correcting this, and to me that wasn't necessarily a discussion. That was a way of confusing the students with information. So I just closed it down 'cause there wasn't anything interesting. When we inherited the module I just switched it off for our students that time.*
>
> (Dept. D / Academic 2)

This issue served as a key justification within department D for non-use of module discussion boards.

(ii) Social media

Department D educators therefore chose, as a programme team, to close the discussion boards, considering them of little value within department D's information management approach to module website use. This action was reportedly not commented on at the time by the students, and it became apparent to educators that the students already used their own social media based discussion networks relating to their course and cohort. Department D students confirmed this situation within their focus group discussion and further reported that many of their lecturers had since migrated into joining them on their Facebook web forums.

> ***So what turns you off the discussion boards?***
> *It's also the discussion boards are very much sort of you go "Oh I've got a problem with this, what category does that fall in to, is it in clinical, is it biological? Have I got to go to that discussion board"? Whereas the Facebook one is open. You can discuss anything you like at any time. You don't have to think. And it's informal whereas on the discussion board you think "My question might be judged". (St4)*
> *No. I mean the lecturers do say at the start of the year, you know, keep checking the discussion board, but 99%...the lecturers now, they have gone come to Facebook. (St1)*
>
> (Dept. D / Student Focus Group)

As suggested by student narrative across all four departments, department B educators also expressed the belief that low collaboration noted on the module discussion boards

was partly due to widespread alternative use of social media such as Facebook and Twitter.

> *Yea, I think because they're into Facebook and Microsoft Messenger and Twitter and all these things, the last thing they actually want is another load of technology to use.*
>
> (Dept. B / Academic 5)

The student preference for social media sites to communicate and collaborate reduced (and often completely replaced) the use of discussion board entries whilst also having the unfortunate effect of preventing educator awareness and involvement in discussion.

> ***So what about the discussion boards then? Do they get used to talk to your tutors or each other? Do they help?***
> *GROUP: No, never, No, No*
> *It's just safer to spend more time on Facebook isn't it? (Laughter). (St3)*
>
> (Dept. B Student Focus Group 3)

The interesting comment above suggesting a fear by students that their questions might have been judged in some way unsuitable was explored later in theme three (Section 6.4); whilst the finding of department D educators being invited into joining their students on closed social media cohort sites was distinct to this department, and also discussed in theme three.

6.3.3: Category 3. Selective engagement

The third category within theme two was S*elective engagement* and collates the data associated with the way in which students and educators chose to engage with some aspects of e-learning whilst avoiding engagement in others. It draws data from five main codes, namely *Collaborating; Prioritising; Feedback; Communities of learning,* and *Attendance or engagement*.

(i) Collaborating

A key learning outcome required across all four department professional healthcare programme specification documents was the aspiration for students to collaborate with peers and a range of healthcare professionals in practice. Although this was confirmed by an examination of relevant module descriptors; when analysing the educator narratives, it appeared e-learning was viewed from varying perspectives as to its

appropriateness and success in achieving a collaboration skill set. Both educators and students appeared selective in the way in which they used information technology and intended e-learning exercises to engage in collaboration. The text extracts from Departments A and D exemplified comments made across all four departments:

> *The IPL* (Inter-Professional Learning) *module is effective if students participate in the discussion, but I've found very varied levels of engagement and very varied approaches taken by the staff. Then again, it's not for me to write the approach... I personally like collaborative learning but the majority of engagement is minimal.*
>
> (Dept. A / Academic 1)

> ***Do you require them*** (students) ***to use online collaboration skills..?***
> *Not as part of the module learning No, learning to collaborate and debate at an appropriate level is hard enough in the classroom, and requires a whole different skill set when you introduce an online medium to boot.*
>
> (Dept. D / Academic 3)

For some department educators, student experience of collaboration did not always need to be face-to-face, although the prevailing view was that face-to-face collaboration practise and engagement was the preferred format or at least an essential component of developing future professional competence in this area, as exemplified by comments such as:

> *but one thing to be very clear about is that….students…need...people, you know, they need to engage with lecturers as people, you know and some of that might be via medium other than face-to-face, but it's still engaging with people and some of the time they need to engage face-to-face and they need to engage face-to-face with each other if they're going to do anything meaningful in terms of developing their collaborative skills.*
>
> (Dept. B / Academic 1)

Students did not express any appreciation of the importance of developing professional collaborative competencies during the focus group narratives, nor of any potential role online virtual collaboration might play in developing related future skills. Department A students openly stated they did not enjoy working in groups to develop presentations and feedback to peers, whether in class or online, preferring individual effort to achieve learning tasks and assessments. Department B students did appear to enjoy group work, yet alluded to differing circles of collaboration, ranging from cohort acquaintances, with whom such thing as room changes might be discussed to closer friendship groups where they felt more at ease discussing personal opinions. The following extract typified comments noted in department A and B:

Well yeah. I mean, I mean you talk to the people that you know about it don't you, I mean you're not going to ring or like text or message someone on Facebook that you don't speak to in uni about uni work I think, I think that's, I think that's our problem with group work, it's not our problem with e-learning we just don't like engaging with them, with people that we don't usually engage with (St1).

With the group on Facebook for our, for our cohort group that it, if any of us has a particular question be it about timetabling or signs on a document that's meant to accompany an assignment someone can say have you seen such and such and then normally other people will play in and that's not necessarily your friends, they're, they're just our cohort group the full set of us but if it was something actually about an assignment I was unsure of I'd go to one of my friends (St2).

(Dept. B / Student Focus Group 2)

Department D student narratives suggested some online collaborative discussion about module resources to a greater extent than departments A, B and C, as the following extracts illustrated:

Is e-learning one person sat at a PC or a group of people?
I'd say group (St1).
I'd say group of people. We do, especially when it comes to revision we do a lot of group work. And there will usually be a group of us on line, or more often sat around a large desk with one or two lap tops. And we would have, be taking notes, and also people pulling information off line to check what we are writing down. (St3)

(Dept. D / Student Focus Group)

Is it an individual at a PC or is it a group of people?
Individual I think. (St1).
Mine's individual. (St2).
I would think individual. (St4).
So your mind pictures an individual?
All: Yes

(Dept. A / Student Focus Group)

For the majority of students, unless mediated through unofficial social media, any collaboration regarding module materials predominantly took place in the physical, not virtual educational environments.

(ii) Prioritising

Restricting online collaboration to friendship groups within social media sites was one example of how students engaged in e-learning in ways unintended by educators. Another way in which student engagement did not match educator aspirations or

expectation was the way in which students selectively engaged with online learning materials by prioritising what they considered to be most useful. When students perceive e-learning to be unjustified, unclear, or unnecessary, they selectively disengaged and prioritised other activities over the set work. These activities ranged from focusing exclusively on the summative assessment to extracurricular activities such as undertaking paid employment or child care duties.

Interviews with educators highlighted that across and within departments, views were mixed with regard to awareness that students prioritised other forms of learning and external activity over e-learning, and whether it was viewed as a positive or negative phenomenon. For some educators, the learnt ability to prioritise workload was an important professional learning outcome and justification for e-learning in itself. For others, failure to engage in expected e-learning represented a lack of student awareness of the benefits of formative learning and a risk to achieving evidence based professional competencies. This mixed picture of views was found across all four departments, and across both students and educators, with the key points exemplified in the following two quotes:

> (Names professional group) *are by character, not the sort of people who can pull out what's needed and what's not needed, so... you know, I can work out,.. that I can get by without doing that e-learning and better investing in other things; and once I'm qualified, that's the skill you will want me to use, isn't it.... don't know if there is a perverse benefit or not, but when they are in the world of work, they have got to be able to quickly work out what has to be done and what effect... with the time.... I know I can leave that....*
>
> (Dept. B / Academic 4)

> *if there is no summative assessment then it is not taken seriously by students. They are on the whole, they don't see the value of formative learning, they don't know it's happening. I'm not saying they don't benefit from it, but they don't see it happening, if they don't engage,*
>
> (Dept. C / Academic 1)

Student narrative suggested that for e-learning to appear justified to the student, the work undertaken online needed to be seen as relevant to the module assessment or clearly applicable to future professional practice. For example:

> *I think that when people saw e-learning on, on, on the timetable it was a day off once they realised nothing's getting marked especially when you've got other assignments to be doing as well. (St2)*
> ***So, so other priorities take-over do they?***

Definitely, especially this year, I think if there was e-learning this year no one would touch it. (St1)
Yeah. (St3)
Because there's a dissertation to do. (St4)
(Dept. B / Student Focus Group 1)

E-learning exercises that were not perceived by students as contributing toward passing the module assessment, regardless of whether study time had been allocated within the standard university attendance day, were often not completed. The same finding often occurred regardless of whether the professional relevance of the topic was accepted by the students.

(iii) Feedback

A key determinant of how students engaged with e-learning was the perceived relevance to the summative module assessment and students' expectations of formative feedback from educators. Educators however, also appeared to selectively engage in e-learning as evidenced by student and educator reports of inconsistent provision of feedback on student e-learning endeavours. This factor was most frequently discussed by students within department B, being present across all three focus groups:

I think as well we were under the impression it was actually going to get marked in class. (St3).
Yeah. (St4).
-because we were told that every two to three weeks we were going to be coming into class and going through the questions, and passing it round and testing each other. That wasn't what happened and I think that was when people stated filtering off and not doing it then. (St3)
(Dept. B / Student Focus Group 1)

There should be more back from them, cos we have things to read or watch and all it is really is we watch something and think about it, but there's no follow up on that work, so you're not sure you're getting anything out of it. (St6) (Dept. B / Student Focus Group 3)

From the above excerpt, feedback expected by students appeared to equate to being provided with a grade or mark for online work, which was often inconsistent with the educator set exercise such as reading an article and personally reflecting on the content against recent practice.

Although there was an overall focus on achieving a pass within the final module summative assessment when considering the student focus group discussion,

department B students were not requesting further summative assessment of their online work, but more frequent and ongoing assurance from educators that the learning achieved was both sufficient for future professional practice and accurate. Without this assurance, students began to doubt their learning, as suggested by comments such as:

> *So if we've been given like an area like the liver to learn and all the conditions and you know, and, you know, read around it and that type of thing and then we're tested and then it was explained and I think it would have been a lot better than just being given, you know, like e-learning to do and being told to go and do that 'cause then I would know when I know enough, I mean, I know I'm not supposed to be a doctor but do I know enough about it, what am I expected to know about it, how much am I expected to know?*
>
> (Dept. B / Student Focus Group 1, St 2)

Within departments A and D, the information repository model of module spaces, designed to support class based lessons, resulted in students not expecting feedback and assurance on e-learning endeavours in the same way as department B. By contrast, department A students positively commented on the benefits of emailed written feedback in the form of e-tutorials carried out by one member of staff:

> *I find that the online ones are better than when you go face-to-face because when you go face-to-face you are like "oh. There's too much information", and you come out and it's like "oh I've forgot it all", whereas when it's online you've got it all there to keep.*
>
> (Dept. A /Student Focus Group, St 4)

For department A and D students, feedback on e-learning engagement involved two way communication with educators when clarification was needed on personal online study aimed at further confirming subject understanding already considered in the classroom. For these students, e-learning feedback was more about proactively seeking online or physical tutorial support if needed, than awaiting a grade mark for new subject matter work undertaken independently online, as with department B and to a lesser extent, department C.

(iv) Community of learning

Unstructured online communities of learning existed within the case university for each of the undergraduate programmes examined; however they were not borne of any module discussion board, but through students' private social media groups, as evidenced by narrative such as:

> *And you choose who you talk to I suppose with Facebook as well, if you set up like a group yourself, cos we did one I know for Shared, that was*

> *for all the students and that was really good. Everyone who attended university added themselves into it, and that meant that if ever there was an issue raised everyone could sort of chip in and usually there is someone that has an answer for what you're asking, usually someone has heard something different to someone else, so it's sort of... almost raises the need to not speak to the lecturer about it or the discussion board, so...*
>
> (Dept. B / Student Focus Group 1, St 2)

As noted by an e-learning advocate within department B, due to the prolific use of social media within groups, unofficial and often undisclosed student communities of learning existed. Although these groups provided a level of student mutual support, they tended to conflict with departmental attempts to provide module based online networks:

> *Yea, I think because they're into Facebook and Microsoft Messenger and Twitter and all these things, the last thing they actually want is another load of technology to use because, they use Facebook and all these things to exchange information amongst themselves anyway, to pass messages*
>
> (Dept. B/ Academic 3)

Distinct from departments A, B, and C, there was evidence in the student narrative that social media facilitated communities of learning within department D included educators at an inclusion level which both parties were comfortable with:

> *They are on Facebook anyway so we can interact with each other through the group but we can't see each other's personal information or anything like that. It's more, it's very much input with their sort of like… it's students helping students but having the lecturer's support there is really useful, especially if they often post studies and things that they've found and it's really … and I think some of the lecturers use that more than their discussion boards now.*
>
> (Dept. D / Student Focus Group, *St 3)*

This contrasted with the findings from departments A, B and C, where students appeared averse to including educators in their social media groups. department D also seemed distinct in that it was the only department where educators were observed using social media methods such as Twitter to engage with students to introduce them to international research and learning communities, as Dept. D/Academic 2 related:

> *They can drop in to the Twitter stream without following if they don't want to follow or they can erm...well they can follow me but not very many (laughs) I mean not very many of the students follow me but it's been quite nice cause they've been making contact with...we've had er...academics as well, yeah, so it's nice from that point of view.*
>
> (Dept. D / Academic 2)

Despite department D students appearing to implicitly describe a virtual community

of learning, no student group from any programme directly described their social media based subject queries or discussions as a virtual academic community of learning, nor did they articulate that educators, although possibly an invited member of the group, were present online to deliberately facilitate such a community.

(v) Attendance or engagement

Each undergraduate healthcare curriculum, whether delivered through a virtual medium or through physical contact in the classroom raised educator and student expectations for regulated attendance. This expectation appeared to be considered by some educators and students to mean an equivalent time spent engaged in online learning activity when taught sessions were replaced by online directed study tasks. Furthermore, a minimum physical attendance was perceived by some educators in departments A and B as an explicit requirement of the validating professional body, and was seen to conflict with e-advocate colleague aspirations for a more flexible and constructivist approach to the attainment of module learning outcomes. The excerpt from Dept. B / Academic 1 encapsulated the two views:

> *I know there was somebody in this institution not long after I started here who phoned the NMC because the students had hours missing at the end of year 1… and I said but they've met their learning outcomes and they've passed… yes but they've missed a couple of sessions, they haven't been sat in front of me in class… well the NMC doesn't need to know and it doesn't need to be made public…. if they've passed then yes they've learnt…if they've got learning outcomes in their modules then yes they've passed them….. What's the problem? How can you develop e-learning with that mentality?*
>
> (Dept. B / Academic 1)

The same differing educator views were present in departments A and C. During discussion, some educators considered all student contact hours to be mandated attendance by their professional bodies, to the point of requiring students to complete an independent e-learning session at home of the same length of time as the substituted classroom session as a minimum. Pro-flexible attendance educators conversely cited personal student responsibility, student choice, and allowing students to learn at their own pace as justification for relaxing previously rigid attendance requirements in favour of focusing on total predicted student learning hours within the overall undergraduate programme.

As a result of these conflicting views, students in departments A and B reported the requirement of additional online work by some, but not all educators to replace absences from class delivered sessions, despite the pre-existing availability of supporting e-learning materials on the module web space. Other additional measures ranged from questioning in open class, to additional essay writing, through to individual personal tutorials to confirm session learning outcomes were understood. The following text illustrated the student response to such an approach:

> *If you are doing anything related to the* (names own validating professional body) *all of those hours are counted anyway so if you miss a lesson you've got to do a big essay to catch up. So that's of no benefit to us. (St3)*
> *You don't want to write an essay. And you still read the work because you need to know it for practice. You're always going to catch up on the work anyway. (St2)*
> *Yeah. You can't just miss it out can you? (St1)*
> *We can't miss it out because we could miss something really vital that you, you know, need in practice. So you're always going to catch up on the work. Whereas an essay is like overworking. It takes me so long to write an essay, so I don't just make up three hours that I have I missed, I do extra on top of that. (St2)*
> ***Is that the policy here?***
> *All: Yes.*
>
> (Dept. A / Student Focus Group)

Students and educator narratives in department C suggested the use of verbal sanctioning when class attendance was missed, or expected e-learning exercises not completed, but additional online work was not expected.

Educators within department B also raised concerns that students misused time allocated within a timetable for e-learning to undertake other activities, and so effectively non-attended allocated theory hours. These concerns were often raised independently of considerations regarding whether or not the student achieved the learning outcomes or passed the module summative assessment. For example:

> *Last Friday was an e-learning day, but she was actually looking after clients as a healthcare assistant. So that time is something that allows them to think... I may or I may not... and it allows them to do a shift.*
> ***Do you think they then catch up in the evening, and maybe do what they were timed to do during the day later?***
> *My instinct is that they don't.*
>
> (Dept. B / Academic 4)

The existence of differing educator views on what constituted sufficient attendance for

allocated e-learning exercises, resulted in e-learning engagement not being consistently monitored and regulated to the same degree as classroom attendance. This led to student non- engagement in directed online study being inconsistently noted by educators. This was particularly evident to students within department B, where educator views on minimum theory hour attainment appeared most varied:

> *We come in and get told, oh no one is here or we haven't booked a room for you so just go home. (St5)*
> *And then we do and we all get marked as absent, cos we were meant to be in... and when we ask like, are we in? We get, oh I don't know and there is no one to ask. (St2)*
> *When that happens you get some tutors who are not impressed and others who just laugh and say, oh just go and do the stuff online. (St1)*
>
> (Dept. B / Student Focus Group 3)

Department D students did not report the same use of attendance sanctions as the other departments. In comparison to departments A, B, and C, department D students appeared more confident in openly choosing e-learning resources over lecture attendance, and more confident in their own ability to cover the topics to a suitable level without educator input. This choice was often made if poor lecturer presentation style was expected. As typified by the comment:

> *It depends what type of lecture I think because particularly for me in (names module subject) in one of my modules there's no point me going to lecture because I can do everything at home in my own time, because the lecturer just mumbles St2).*
>
> (Dept. D / Student Focus Group)

Although some concern was expressed by department D educators about their e-learning resources encouraging nonattendance at lectures, no 'make up' time was required of their students. Educators within this department relied on the quality and enjoyment of the class interaction to motivate students to attend, and justified this unregulated approach by reference to the student responsibility for their own learning. However some educators within department D reported having tried removing key information from slides before uploading to the module space, but this was considered non-facilitative and ceased before the year of data collection for this study:

> *At one time I worried that the materials online were being used instead of attending lectures, so I toyed with removing key words from the lecture slides and support information to encourage students to join the lectures. However, it's incredibly time consuming and students fed back they felt it was patronising and overly controlling, so I dropped the practice and suppose I have to trust them now to get it right for themselves.*
>
> (Dept. D / Academic 3)

6.3.4: Summary of theme 2 findings

This section presented findings under the theme of educational culture. The theme codes were structured under three categories of e-pedagogy, communicating, and selective engagement associated with how educators and students engaged with e-learning within a professional undergraduate healthcare programme. All four departments used dedicated module web spaces to provide ease of access to learning support materials and academic search facilities. Learning information materials were well received and used by students; however attempts to provide a more pedagogically based learning experience via module web spaces received mixed reviews by students and educators. When populating module web spaces with learning materials, some educators within departments A and B appeared to have aligned to an educator controlled teaching strategy and e-pedagogy, which at times assumed transmission of knowledge, as opposed to social construction of knowledge.

Department B most often substituted previously taught sessions within a module with individual student's e-learning experiences. This contrasted with department D educators who made an explicit programme decision to use e-learning only as a support to a classroom based education within the full time undergraduate programme; and department A who initially attempted a similar approach to department B of blending classroom based learning and directed online education via the module web spaces, before returning to a learning support model in line with department D.

Due to the information management structure of the module spaces and differing pedagogical views held by educators, students were presented with differing learning experiences ranging from information repository style online materials with minimal or no guidance on how to engage with them, to other educators presenting the same students with highly educator controlled e-learning tasks such as workbook exercises. There existed tensions within departments A and B teaching faculties as to the right approach to adopt, particularly with regard to the frequent use of PowerPoint slides as an online learning resource and the mandating of online engagement hours when substituting for classroom attendance.

The data suggested that communication based e-learning was not often used within the

departments. Module discussion boards were rarely active within the reviewed undergraduate modules across all four departments. Despite little evidence of discussion board use being found on review of the relevant module web spaces, department B educator narrative described a mixed picture of use, suggesting an over estimation of such communication by some educators interviewed. This situation was confirmed by students, including in department C, where students preferred to email educators directly; who then posted the question on the discussion board under their own name for other students to view. Additionally, student responses from the focus groups suggested that module discussion boards were rarely checked by educators.

Students prioritised other activities over e-learning they perceived not to contribute to success in module summative assessment, or future professional competence. Activities given priority ranged from focusing on written assignments or examinations to extracurricular activities such as paid work or childcare. Educators also appeared to selectively engage in e-learning, providing mixed levels of feedback on online work. A resulting perceived lack of feedback by some students appeared a major factor in their decision to reduce engagement in e-learning.

Communities of learning were external to the university VLE in the form of social media group sites. Students within department D appeared to collaborate within these social media groups and welcome their educators into the groups. Department A and B students did not invite educators into their social network groups however, whilst the department C educators interviewed considered social media site involvement with students to present too high a risk of professionally detrimental issues. Educators from departments A, B and C were therefore likely unaware of the learning discussions and support taking place within the student's social media arena.

Mixed views and strategies existed regarding the use of e-learning to maintain minimum required attendance amongst educators and students, particularly within departments A and B. This resulted in varying approaches to the application and monitoring of e-learning engagement. Differing views were held by educators regarding students selectively engaging in e-learning, resulting in some educators attempting to ensure completion of online work, with other educators within the same department advocating student choice and focusing less on time spent engaging with

virtual exercises and more on whether the overall module learning outcomes were achieved.

The next section presents the findings of theme three: Builders and Blockers, which collates the factors which helped or hindered engagement in e-learning by educators and students across the four departments studied.

6.4: Theme 3: Builders and blockers

Whereas the last section reported how students and educators engaged in e-learning, this section reports factors which helped or hindered engagement. The theme was named Builders and Blockers due to the finding that the presence or absence of certain factors, whether perceived or physical in nature (such as the level of information technology competence or large class size), was used as an explanation for participants either using or not using e-learning. The theme was structured into four categories, with each category containing between two and five codes.

6.4.1: Category 1. Infrastructure

This category included the availability and functionality of the hardware infrastructure required to support successful e-learning, along with systems infrastructure such as required policies and working practices to support engagement. Within this category, infrastructure was also taken to include the necessary shared understanding and justification for e-learning by educators and students. Key findings within this category are reported with regard to how infrastructure affected why educators and students engage in e-learning as they did.

(i) Physical infrastructure

The data collection period coincided with a planned university wide move from a previous bespoke virtual learning environment (VLE) to a commercial VLE. The planned move followed a period whereby the original VLE had reportedly proven problematic in terms of reliability of student access, functionality, speed of data transfer, and usability. Students were predominantly complimentary about the computer facilities provided by the university, although previous recurrent problems encountered with the VLE infrastructure impacted negatively on some educator and

student perceptions of e-learning. The impending change to a Moodle based VLE was viewed positively by educators as a solution to common concerns regarding reliability of resource accessibility to students, particularly in light of perceived greater university reliance on TEL, as the following quotes identified:

> *It used to be, before we were a little bit less cash restricted, we... used to, or I used to, download and print off for them the workbook so they could actually go home, but now you can't do that, it has to be absolutely online there's no backup paper chase...it's absolutely got to work*
>
> (Dept. A / Academic 2)

> *I don't...as long as I've got somewhere to put things that students can get to I don't really mind so for as long as it's there and it works fine. I mean obviously what's really unhelpful is if the whole system crashes, it has a few times. That's really disastrous, you know?*
>
> (Dept. D / Academic 2)

> *I think there was a day when, or a couple of times I think towards the start of the year where it kept going down. Like you'd be at home. Because we're all on Facebook, like as a group we were like "oh I can't get on, I can't get on." (St1)*
> *e-learning's really good but when it goes wrong…(St2)*
>
> (Dept. A / Student Focus Group)

Students and educators also reported an inconsistent physical infrastructure in terms of availability of personal computers and university learning support staff, across different departments which contributed to lower student and educator satisfaction with e-learning.

> *You're not got it the same on all sites, like in (names department) they've got big computer rooms we had a lecture in one last week didn't we? They've got big computer rooms that they said this afternoon we're going to be in room whatever on the computers we're going to do the online learning, that's dead structured that's part of it that feels like it's, it's involved in your module whereas we don't have that...when they send you off to go and do it at home it just pales it into insignificance for me.*
>
> (Dept. B / Student Focus Group 2, St 1)

Programme organisational infrastructure appeared to be a recurrent challenge for both students and educators within departments B and C as a result of short notice timetable changes due to insufficient room or educator availability. Typical comments were exemplified by:

> *There's nothing worse that thinking you're in and finding out they have changed it to e-learning last minute, and then you have to go away and plough through loads of reading and stuff you are not sure what it's*

about; or no one can tell you if you are in on a day, so you spend the night before on Wikipedia searching on the topic to try and do the lesson, only to find that they have got someone in last minute and you should have been there.

(Dept. B / Student Focus Group 3, St 2)

There was also a view amongst some department B educators that the structure of the programme within which they were attempting to employ e-learning used the available resources inefficiently, suggesting a review of the blended learning timetable as a possible solution. For example:

What we do is we send them all out for e-learning then we bring them all in for simulation, well... why are we doing that, why aren't we bringing half in for simulation and half doing e-learning, then we don't get the overcrowding. Because people will say on other sites more than here, we haven't got enough space in the IT suite. No because you bring them in all on the same day, we haven't got enough room in the simulation suite, no because you bring them in all... but now they've all gone home!... so we're not ... making the best use of resources.

(Dept. B / Academic 4)

Additionally, educators in department C discussed a lack of time for effective e-learning web space review and updating due to the structure of the Academic year and module review timeframes:

Part of that is you have to give your module delivery plans so far ahead, before I've even thought to review the last module. That's one of the things I find a disconnection here. You've got to be sweeping that broom before you've dealt with that one. And I don't know if that is a faculty issue, because there is no real cycle for the faculty, as there is for other departments or other faculties where the academic year is much clearer.

(Dept. C / Academic 3)

Although having experienced VLE access problems, and room or educator non-availability did not feature in department D student discussions, which presented a generally more positive view of the VLE than other departments and further welcomed the planned changes:

I think it's just things that need to be… little faults. I wouldn't say it's a massive problem. (St1)
Is it reliable? Can you log on when you need to log on?
Sometimes. (St2)
It's… it had a crash the other day for a couple of hours. And last year near towards the end I think it had a… basically the entire university system went down. And that took them a good five days to… it wasn't great to have it around exams but it just, I suppose, overall… over the year it's very consistently available but when it does have a crash… I suppose it's really how much you rely on it. When it goes down it's "Oh Christ, how am I even going to get hold of half of these"(Laughs). (St3).

All in all I think 90% good, maybe… (St1)
Yeah I think the new format looks really good compared to last years. You know the new one where they've got like you can… and they've got like more interactive buttons and it looks better. (St3)

(Dept. D / Student Focus Group)

There appeared to be mixed views amongst educators on the potential benefits or challenges of e-learning when applied to large class sizes. Class sizes of 20 students were viewed very positively within department A by students and educators, and given as a reason why e-learning via a discussion board was not required; however, for department B who consider their class sizes of 80 to 100 students to be large, class size was considered a challenge to effective use of e-learning by some educators, whilst e-learning was seen by others as a possible solution to non-engagement by students within a large class.

I think that's the best way to make e-learning useful, to discuss it, and to get people engaged, but I think that is massively problematic with our systems and our group sizes, I would prefer to do it online but I would need 10 people for those at the very least and that's the problem I think.

(Dept. B / Academic 2)

If you're sat in a large classroom for three hours being talked to, you can fall asleep… and you'll still get your mark, you'll still get your tick on the register and as far as some staff are concerned, you've learned… but engaging with the information and having to physically go and click onto the link and read it before you can go on to the next one makes you read the information.

(Dept. B / Academic 1)

(ii) Support

When engaging in e-learning, educators and students relied on a number of support mechanisms such as the information technology helpdesk, along with support roles, such as information technologists, e-learning coordinators and library staff. Information technologist support was viewed positively by educators, with IT technicians providing technical and basic instructional design support, rather than guidance on e-pedagogy. The role focus and amount of direct support information technologists could give an educator appeared to lack clarity. Due to workload constraints, information technologists considered their role most efficiently carried out by providing group training, as opposed to individual support sessions, whereas educators felt they required, and received the best support from individual tutoring. Some educators felt information technologist support should go further and provide a

service to build module web space functions alongside the educator. Example comments below were found across all four departments:

> *The materials we put on the module spaces for student to read and research around is really useful and they like them; and* (names I.T. support technician) *has been a darling at times when I needed to know how to upload something, or create a link to something, but I'm also very aware that, that is not necessarily his job.*
>
> (Dept. A / Academic 3)

> *it's useful having someone like* (names IT technician) *or an administrator to help you to put it together, to help you put it on the module space,*
>
> (Dept. C / Academic 1)

Faculty e-learning coordinators received mixed educator opinions however, and appeared to have a poorly understood role. Where educators saw information technologists as assisting them with authoring the module web spaces, e-learning coordinators were expected by some educators, to educate colleagues on pedagogical approaches to support e-learning, and carry out similar functions to the IT support technicians by others. The predominant view of the e-learning coordinator was that they had insufficient time to complete their role effectively. For example:

> *I was massively unsatisfied with the e-learning coordinator, because when I asked for help I just got told that's not my role and I didn't really understand what that person's role was particularly. It was very much… you know, I got told to go away and find the resources and they would help me put them on, well I don't… I don't know how to assess the quality of the resources, I don't know copyright, I don't know… do you know what I mean?*
>
> (Dept. B / Academic 2)

> *Ahh... the faculty e-learning coordinator is worth a mention... very useful. Proved invaluable in fact to some colleagues. She not only coaches those who are a little rusty on how to upload and author to the module spaces, she also helped the programme team to structure our module spaces, so they all present the same look and navigation system. Very important for a new student.*
>
> (Dept. D / Academic 3)

Students rarely made reference to the information technologist, and showed a vague awareness of the university's learning information services. Department A and B students tended to approach the module leader as their first port of call for support with e-learning. This was a role which the majority of educators did not identify with, and those that did expressed concerns that they were unable to support the students as they would wish.

Dept. D students gave a positive view of the module web space support they received from their educators, although again due to the information management structure, student demands for educator support appeared less than those made by department B students:

> *But I would say the lecturers, even if they do give you the basics and try and encourage you to do as much independent study as you like, they always have an open door policy; especially in the (*names department). *They have… they are available most… throughout the day. And if they are not available they always answer emails the same day or the next day.* (Dept. D / Student Focus Group, St 3)

The third support role identified by students and educators was provided by the library staff. Although not a designated information technologist or IT support staff member, the librarians were used across all four departments to deliver the introductory session on using search engines found via the module web spaces, and appeared to be the first introduction to university based IT training experienced by the students. Librarians were also approached by some educators to assist in constructing reading lists and online resources, despite this being outside their normal role remit. An exemplar comment was:

> *Library are very good, but they often do things that aren't ... I know it's not in their remit.... I wait until they offer! ... or I say, I don't suppose you know who would know.... and if they offer, then I think, well they must feel able to but, ... I nearly always say, you don't happen to know how or who would be able to?.. erm ... and see what happens.*
> (Dept. C / Academic 3)

The librarian delivered module web space learning resources induction sessions received mixed reviews from students within departments A and B, with the predominant comment being that the introductory session on starting the course was insufficient for the students to fully understand and engage with the VLE functionality, as exemplified by:

> ***Okay, So what would help make e-learning better?***
> *Instructions maybe? That... I don't know... give tasks that help you to use it, and a few more sessions, cos they give you one session in the library when you start and you forget it.*
> (Dept. B / Student Focus Group 3, St 6)

Student narrative suggested they tend to counter the perceived shortfall in initial guidance and understanding through peer support and networking, as opposed to approaching educators or the library helpdesk service.

(iii) Benefits

E-learning was justified by educators in terms of logistical benefits, such as facilitating diverse student groups to learn together by overcoming difficulties of time and distance. For example:

> *Now I could see all of that working really really well for that because how else in the, you know in the difficulties of interprofessional learning, getting groups together at certain amounts of... at certain key points within programmes, across sites, so yeah I can see the values sort of like..*
>
> (Dept. A / Academic 2)

Reference to perceived benefits to the students, such as improved access to learning resources, flexible study hours, and reduced travel or child care costs were also seen as positives. Educators also talked of benefits to themselves, such as efficient use of resources; and for some, but not all educators, improved time management and reduced direct teaching workload. Example statements included:

> *The materials we put on the module spaces for student to read and research around is really useful and they like them.*
>
> (Dept. A / Academic 2)

> *They've got the option of doing it at their own pace, their own time…erm…they don't have to go the university and try and find a parking space*
>
> (Dept. B / Academic 3)

> *Some of them are so anxious to [not] miss anything that they will do it all, and that then gives them that flexibility. It gives the teaching staff that flexibility too, because you can think in a module, of look I don't see them now, oh I don't see them now until October*
>
> *(Dept. B /* Academic *4)*

Educator e-advocates also justified e-learning in terms of improved pedagogy, whereby students with varying learning styles and previous experience or knowledge might engage at differing points, differing academic levels, and differing formats with the e-learning resources placed on the module web space. These perceived benefit were repeatedly evidenced in comments such as:

> *I think there's loads of benefits. I think the biggest benefit is that it's about learning, it's that we're moving away from spoon feeding from this very… you know we are creating people who can think, who can use the resources and can think for themselves, that's the biggest benefit.* (Dept. B / Academic 3)

> *In the context of e-learning it's a mix isn't it?* (clear statement, not a question) *between doing some stuff in the privacy of your own bedroom with your computer and your books or whatever, and being, in a class*

with a teacher, with other students and they need not be at the same time, so I think there is the learning you get from each other, there is the learning you get from the teacher, erm… and there is the learning you get from yourself, because we all have these different learning styles.

(Dept. C / Academic 1)

However, as noted in theme 1, the information repository format of some module web spaces did not guide students to capitalise on this potential individualised learning, whilst the educator focused pedagogy left little freedom for students to control their own pace of learning when e-learning.

Not all educators agreed that perceived benefits justified virtual learning in place of classroom taught sessions, particularly for full time students, and this view was most noted in department C:

They don't pay for parking here anyway, and many live in. For some they are not having to drive a long distance in, so I would think that would be a benefit, erm... but the one I'm thinking about, it's a difficult module, where its new terminology, new ideas, so if you cut it from ten down to five face-to-face, it's difficult to.... it would have been worth the drive in....yeah.... to get your head around.

(Dept. C / Academic 3)

For those of us who have invested the time and effort in developing our support materials for the module space, yes, it does what I hoped it would do, but I don't ask of it that it teach my students, I do that.

(Dept. D / Academic 3)

A consistent reported benefit of e-learning from students across all four departments was the instant access to learning materials and research repositories. For example:

It's very resourceful and stuff, it's got loads of stuff on it. If a lecturer refers to a journal article it's probably on the e-learning space in the e-learning so you can just click on it and it's open. You don't have to go searching for it through journals.

(Dept. D Student Focus Group, St2)

Despite educator belief in the benefits of e-learning for students borne of not having to attend a physical classroom session, such as reduced childcare and travel costs; the responses from the student focus groups from departments A, B and C suggested students perceived the same benefits as insufficient justification for the loss of classroom based lectures and the associated educator/student interaction.

For me of course, you're going to benefit from not getting in your car and coming to uni, and saving money or petrol, but... that does not benefit me learning, because.. because... I'm not learning, essentially

(Dept. B / Student Focus Group 1, St3)

I haven't got a child but I can't imagine I'd be doing e-learning if I had a little kid running around.
Yeah, I find it enough, I struggle enough at home to find the time to do things and I've got no children.

(Dept. B / Student Focus Group 2, St 5)

Such benefits to e-learning were also reduced for students by module timetables which interrupted a day allocated for e-learning with an hour long classroom attendance session, resulting in a return journey to continue e-learning on the same day. Furthermore, unexpected revisions to the timetables appeared frequent occurrences for students, resulting in short notice changes in attendance requirements. This issue occurrence was most frequently mentioned by students from department B and exemplified by:

The tutors told me it was to help reduce my child care, but I can't just not book a place on the odd day, its three days a week or not, and they tell us we're in Monday, we're not in Monday, oh in for part of it. So it's a little frustrating that I'm paying to be somewhere that I then don't have to be there learning, whilst I'm paying for it then

(Dept. B / Student Focus Group 3, St 1)

The above loss of e-learning benefits were also perceived in departments A to C, where blended learning had been used to substitute for class based sessions, whereas within department D, the agreed conformity to a model of information management to support established classroom based timetables produced no such accounts of instability from their students, who appeared far more positive about their e-learning experience, with narrative containing comments such as:

I would say having the lectures on beforehand is very good for sort of looking what there is there and pre-reading. You are able to take in things a lot better if you know what's coming up. So you don't arrive to a lecture thinking "I have no idea what this is going to be about". So it helps you structure your mind in order to begin working.

(Dept. D / Student Focus Group, St 3)

It appeared that a requirement for any infrastructure necessary to facilitate e-learning for students included not only delivered benefits, but a stable timetable of blended delivery. For some educators, positive benefits of e-learning, both from a pedagogical and organisational stance, also included benefits which might be described as ulterior motives for engaging in e-learning, as outlined in the next code.

(iv) Ulterior Motive

The view of some educators across the departments was that the wider university's' and some colleagues' motives for developing e-learning were linked with management of limited resources in the same way as other colleagues might cite educational improvements or attempt innovative teaching strategies. During the year of data collection, departments A and B had repeated issues of inadequate room availability, which was often managed by short notice changes in session delivery methods to an online directed study format. Examples of evidencing comments included:

> *It's great as a resource for further information, for giving directed study if we are ever short of a classroom, or someone's off sick.*
>
> (Dept. A / Academic 3)

> *We've had issues with rooms and room sizes and there has been the pressure from the university to actually do more e-learning…so…it's something we've had to do for a number of reasons…so...whether the students like it or not, we have had to do it for different reasons…*
>
> (Dept. B / Academic 3)

> *We are not going to get any more money because that's the nature of our times; so we are thinking that one of the ways in which we can create some capacity to do things like some research is to, you know, rather than spend four and a half hours leading a day's session, that you do some online material.*
>
> (Dept. C / Academic 1)

This ulterior use of e-learning, although understood by educators as often justified, created concerns regarding the loss of a quality student learning experience and sufficient level of student support.

> *She said it's just that the group aren't sure if they are in or not, and I said, well where is* [names module leader], *she said she is on annual leave this week, and I thought, well there you are. She is taking annual leave, which we all would, because I'm not in class. So that's the way the cookies, crumbled. It's not seen as oh well they are on blended learning so I must be available for them.*
>
> (Dept. B / Academic 4)

> *It's not a case of we are giving them this, we are leaving them, so I can do something else.*
>
> (Dept. B / Academic 5)

Despite positive statements toward provision of e-resources, an apparent awareness of ulterior motives for the use of e-learning was noted and commented on by the students during the focus group discussions. A resulting perception of a lack of educator interest de-motivated some students to complete the required e-learning exercises or reading:

One thing I always think is that with some of them, not all of them, that you get the impression they have got better things to be doing than teaching us.

(Dept. B / Student Focus Group 3, St 2)

Yeah, it's just like they get to go and do their own work in their office isn't it and we just go and let's face it we do our own thing, don't , a lot of the time we don't do it and that is unfortunate because it wouldn't be in the module if we didn't need to learn it.

(Dept. B / Student Focus Group 2, St 6)

Whereas during the year of data collection departments B and C appeared to be wrestling with a lack of clarity as to the motivation for developing e-learning, department D appeared to have come to a consensus decision in previous years that use of e-learning as a means of freeing educators from teaching to engage in other activities was unjustified:

Well, now that I and other colleagues have dragged the department back from the mentality of delivering everything via a workbook, so we can all run off and research what the use of workbooks do to the development of a [names profession], *I think the risks have much reduced.*

(Dept. D / Academic 3)

We've definitely moved away from the idea of well we can put it all on the web and we won't have to see the students and we can carry on doing what we like doing which is doing our research thank you very much.

(Dept. D / Academic 1)

6.4.2: Category 2. Preference for physical presence

In keeping with the theme of reporting factors which affected why educators and students engaged in e-learning as they did, the following section explores codes under a category encapsulating educator and student preference for physical presence over virtual presence. This category contained four codes, namely immediacy of response, interaction barrier, professionalisation, and guru culture, explanations of which can be found within the coding audit trail on the accompanying CD.

(i) Immediacy of response

Narrative from all four departments suggested an expected immediacy of response by student to queries and feedback on learning exercises or group work. This expectation appeared central to the reasons why educators and students expressed a preference for physical interaction in a classroom over virtual interaction online. This was further

reinforced by educator views on the importance of class based interaction for professional topics perceived as highly important to patient safety or acute illness management, as exemplified by the statements from the head of department A:

> *Although I personally like it,* (e-learning) *however not for covering emergencies and stressful topics as that needs a face-to-face and 1,2,3 step by step approach ... The enjoyment of the interaction is missing in e-learning and you can take a different approach immediately if there is non-understanding during a face-to-face session. It reduces the ability to teach from the hip.*
>
> (Dept. A / Academic 1)

Students asking spontaneous and numerous questions in class, was often cited by educators as a positive indicator of sound student engagement in learning. Furthermore, physical discussion in class was repeatedly cited by educators and students as a more natural way of communicating, and better suited to healthcare related topics such as counselling or emotional support. The ability for educators to reply instantly and react to resulting student responses appeared to have been perceived as a major advantage of traditional class based lectures and seminars over the information management structured e-learning sessions. departments A, B and C educator narrative matched comments made by department D educators with regard to the complex effort required to set up equivalent online communication processes proving unwarranted when the students could readily be brought into class, with a typical comment being:

> *Maybe if I was more sophisticated in building really sophisticated questions and quizzes and stuff like that, but I still wouldn't have the contact...and it begs the question why build sophisticated stuff when you can just bring them in!*
>
> (Dept. A / Academic 2)

These views suggested a perceived lack of justification for communication based e-learning by educators for their full time undergraduate students, which coexisted with an awareness of the positive social motivation gained by students of attending a physical classroom taught session. Students espoused similar views in that their narrative described the challenges of clarifying learning points without their peers and the educator physically being present. The acceptance of social media, when asking questions of each other suggested students did not see the medium as a barrier to communicating in the same way as the educator respondents did, but rather that the speed of educators' online responses to questions, particularly when students are working from home, failed to keep pace with the topics being learnt. For example:

You can't get a quick answer and move on. I just got stuck all the time and then never got round to asking so never got to the end of anything. You just need to make sure and ask a few questions, but it could be weeks before you get a chance.

(Dept. B/ Student Focus Group 3, St 5)

Several students remarked during the focus groups about the potential use of synchronised chat rooms to overcome the lack of immediacy of response when a question was required; however, not all students liked this idea, and remarked that none in the group had experienced its use across any department. The failure of educators to make use of the synchronised communication functions within the VLE was also noted by the information technologist interviewed, and by some educators themselves, who again rationalised the lack of synchronised 'chat room' discussions by reference to the complexity of setting up such a session and on the perceived low reliability of the technology.

Additionally, student expectation prior to starting university was a consistent issue noted explicitly and implicitly within the narrative for both students and educators. Student expectation appeared to have been of a learning experience which revolved around the classroom, with students stating that this expectation was a key reason why they chose the healthcare professional course and case university. Such statements are encapsulated by the narrative of a female participant during dept. B, Focus Group 3:

I came to university though, because I wanted to come to university, so if I wanted to do e-learning I would have gone to like the Open University and do it online if I wanted to work that way, but I want to come to the classroom, I want to come back to schooling and meet other students. I want to be taught. Our course is about discussion, it's not like history and facts, its discussion and like ethics n stuff. Doing it online, you just think, oomph!

(Dept. B / Student Focus Group 3, St 6)

Such student expectations did not always match assumptions of educators who articulated mixed views as to whether they believed students expected and desired e-learning on starting university, for example:

Also, I think students expect it, some, you know very young students expect it, people will expect it more.

(Dept. B / Academic 2)

I mean they've...the students who come here have come here so we want to talk to the people and we want to be their friends (laughs), you know not to...just sit in front of the computer and do e-learning at home.

(Dept. D / Academic 2)

Students presented similarly mixed expectations of what teaching strategies and learning methods they would encounter at university shaped by the stereotypical image of a university lecture.

> *I expected it to be like a person standing at the front and everyone sitting around listening to them.*
>
> (Dept. D Student Focus Group, St 2)

Although students expected and desired the use of information technology in their studies, some did not appear to expect or desire online learning sessions in place of timetabled lectures:

> ***When you came on this programme, were you expecting e-learning?***
> *GROUP: No.*
> ***You weren't?***
> *GROUP: No.*
> *You had to do two hundred hours outside of uni, so that…but I was thinking more of like reading and homework, and like, the lecturer giving some guided work that you then handed in for going over. (St 5)*
> ***So your expectation was for further study rather than....***
> *GROUP: Yes....After the lecture....still taught (talking over each other)*
>
> (Dept. C / Student Focus Group)

department D students were distinct from the other focus groups in expecting a choice as to whether to attend a lecture or not, which they saw as a benefit of the e-learning materials available on the web space, despite department D educators being clear in their interviews that this was not the purpose of the materials.

(ii) Interaction barrier

As can be seen from the previous section, students and educators repeatedly focused on the free interaction between student and educator and student and student that the physical classroom afforded as a rationalisation for a class based preference over virtual discussions. For some educators, virtual communication represented a barrier to developing sound health practitioner communication competency, and possibly an 'easy alternative' for those students requiring development in human interaction skills. Other educators voiced views that virtual interaction was central to both successful e-learning and future professional healthcare practice. However, educators across all four departments opined that the use of a PC to communicate complex ideas required the ability to write with fluidity and expression, which not all students were prepared for. Such views were encapsulated in the statements below:

> *I spend a large amount of time in the first year teaching students how to debate, how to collaborate and work together effectively in the class.*

It's a steep enough learning curve for some without the extra filter of communicating through a PC, so ... I'm not saying it does not have its place, and that in the future there is likely to be far more of it, but cognitively, during discussion, I feel it more of an inhibitor, than a facilitator, so needs to be introduced and used with great caution.

(Dept. D / Academic 3)

It becomes a barrier and people are better verbalising their views rather than writing their views coz writing their views... is a skill in itself. Writing to express emotion is quite difficult to do.. .erm.... coz you can use capital letters and exclamation marks all you like to get your point across... but, sometimes that can go the other way, and can be too brusque.

(Dept. B / Academic 1)

There was recognition however from educators within departments C and D of the potential for online discussion to allow less confident students to collaborate and voice their opinions; however, this was tempered by educator desire to develop an inhibited students' ability to communicate confidently in person within the classroom, as exemplified by:

I'm sure it's true that what you will find is that who speaks most will change absolutely…erm… I know lots of people who would much rather send an email than have a telephone conversation….erm…so you know….so…yea…but that doesn't mean… it…. so it's taken students... who....and give the skills to communicate effectively in an electronic environment is a big plus... But you've also got to take the student who…can't…communicate very effectively sitting in a group of people and give them the skills to do that.

(Dept. D / Academic 1)

Therefore, despite some potential benefits educators generally viewed the VLE as a barrier to communicative interaction.

(iii) Professionalisation

Due to the perceived interaction barrier and other factors considered later in this theme, e-learning modes of delivery appeared to reduce some educator and student confidence that e-learning would ensure practice competence and development of a suitably professionalised practitioner. Opinions included:

Face-to-face sessions are always the preferred method for me. E-learning has limitations on checking application and understanding. At the end of the day it could be someone's life, and many of the things we teach are professionally important for that reason. We also have values to teach and instil which they don't have to worry about in a subject such as history.

(Dept. A / Academic 1)

> *It's my PIN at the end of the day and if I feel that I'm responsible, you know I teach the emergencies one, if they can't get their hands around a* [names an emergency procedure], *do you know what I mean, a* [names an emergency procedure] *I can't do that by... you know...that's got to be face-to-face and practical.*
>
> (Dept. A / Academic 2)

This view was most fiercely articulated within department A, but also present in department B, where the focus of response lay with concerns that the increased distance and reduction in regular physical contact between educator and student risked educators failing to identify unsuitable characters for healthcare workers or students who had been insufficiently professionalised in manner and values. Despite articulating the potential benefits of e-learning facilitating the development of professional skills such as self-directed learning, the same issue was raised to a lesser extent in department C. Example views included:

> *You can't learn professional values off a cold screen, you have to have that academic debate, you have to see the white of someone's eyes..... I don't think we can do all that online.*
>
> (Dept. B / Academic 1)

> *It's not like we're doing I dunno, a philosophy degree or anything is it either, this is knowledge that we need to have that will go into practice.*
>
> (Dept. B / Student Focus Group 2, St 2)

> *You see these students are on a professional programme, and I am very keen from day one to inculcate the idea of you are going to be (Names profession) in 3 years, you're going to be knocking on people's doors being very ivasive in terms of people's lives, can you conduct yourself in a professional manner…It's very difficult to assess that online.*
>
> (Dept. C / Academic 2)

The professionalisation agenda was also mentioned within student narrative, with students from departments A, B, and C also voicing concerns that engagement in online discussion might risk sanctions for inappropriate statements and being considered professionally unsuitable by monitoring academics:

> *I'd worry about them being on when you hear all these stories about students being thrown off the course for saying bad things on Facebook,*
>
> (Dept. B / Student Focus Group 3, St 4)

Although considerations of professionalisation existed within department D, the focus proved to be more on the suitability of e-learning for delivering subject matter to achieve professional knowledge, as opposed to issues such as profession suitability or future service user safety.

> *I suppose it could possibly be done through erm...you know, er...Facetime or something like that but it's not the same and you know, the professional*

setting wouldn't necessarily be electronic either so... that tuned to their... physical environment that they're gonna work in.

(Dept. D / Academic 2)

In keeping with the findings of department D educators, department D students did not raise concerns regarding being considered unsuitable as a professional by their educators, and appeared more open to the idea of online discussion in the presence of module leaders.

(iv) Guru Culture

Where educators maintained a strong identity as a healthcare professional (as noted in departments A and B), there appeared to be less focus on student-centred learning, and greater reliance upon a 'clinically expert' teacher; as suggested by comments such as:

Maybe that's coz our department is kind of a guru type for teaching from a medical background.

(Dept. B / Academic 1)

Similar narrative from students suggested a preference for a physically present and interactive educator aligned with the value placed on an expert clinician, imparting experience and knowledge to the cohort. For example:

We had a lesson the other day on pharmaceuticals which we haven't been taught yet, and we heard that the chap we had coming was amazing. (St2).
Yeah. (St1)
...it inspired us all didn't it? (St2)
Yeah. (St1)
-about finally being taught something we didn't know about basic medicines that I should know now as a third year student that he thought we should know as well, erm… and I just thought like, e-learning that wouldn't work, e-learning ... the way he taught us was excellent in terms of engaging us, and getting us all involved and by the end of it I actually could go away and say I learnt stuff there, but if that was e-learning wise and we got sent home for half a day to do that... personally I would think... (St2)
It would just go straight over your head. (St4)
He applied it so well to patients and… it was that inspirational teacher side... (St2)

(Dept. B / Student Focus Group 1)

The above passage suggested consideration of e-learning as a less valid form of teaching and learning by the student participants, and the desire to be enthused and inspired, which the reported student e-learning experiences appeared not to engender, as suggested by comments such as:

You know, you can't get passion from a computer in that sort of sense, you know.. everyone looks at exactly the same thing and takes it away,

whereas if you have someone inspiring you while they are teaching you. Dept. B / Student Focus Group 2)

When considering why educators and students engaged in e-learning in the ways they did, it appeared that the educational culture (or cultures) within which the student and educator were immersed was as important an influence on their rationale for engagement as was the instructional design adopted or learning materials available.

It also became apparent from the student narrative that how the participants felt about e-learning and their educators also greatly influenced engagement. The next category reports on the codes associated with the affective domain.

6.4.3: Category 3. The affective domain

This category considered the way in which the student and educator narrative highlighted feelings and attitudes that influenced the way both sets of respondents selectively engaged in e-learning. The articulated feelings and attitudes correlated well with the attitudes noted from Data Set 1 Q10, and were both positive and negative. Positive feelings coalescing around the quality and ease of access to online materials, and allowing students freedom to manage their own learning, with negative feelings focusing around the perceived quality of some online learning experiences and adequacy to ensure a competent, safe healthcare professional. Whereas positive attitudes towards e-learning experiences appeared to have minimal effect on the educator-student relationship, negative feelings and attitudes toward e-learning appeared to be reflected back toward the educator and raised tensions between educators and students. As reported in theme two, category three: *Selective engagement*, these feelings were particularly evident where the module teaching strategy did not include sufficient feedback on e-learning work undertaken by students, for example:

It's almost as if the effort you've put in isn't being recognised at all or there's no effort equal to that being put in from the other side. (St2)
I think it needs erm… a lot of input from you, from the lecturers as well in my opinion, cos we're not getting out of it, what we're putting into it in a nutshell basically. (St3)

(Dept. B/ Student Focus Group 1)

(i) Relationship

The effects of e-learning on the student/educator relationship appeared important, particularly within those departments with a strong professional identity. Where a strong focus on educator obligation to ensure students possessed the right values and standards existed, the educator attitude appeared to be perceived by students as less one of facilitative mentor supporting the student along their educational journey, and more one of a professional gatekeeper, assessing the student for appropriate character, in addition to academic ability. Students within departments A and B, and to a lesser extent department C, appeared very aware of their educators' professional gatekeeper role. This awareness seemed to produce mistrust of educator motives, and reservations in some students when required to openly communicate online in the perceived presence of a tutor, as illustrated in the following discussion extracts:

> *I don't like to think they are watching the discussion boards, which I know they are, so that's why I don't.... but it would be useful to have a tutor on there, to ask questions of.*
>
> (Dept. B / Student Focus Group 3, St 4)

As noted in theme two, there also appeared to be less than ideal educator trust as to whether students were completing online work, and whether the work was their own, as noted by comments such as:

> *There really needs to be some kind of mechanism whereby you can monitor whether individual students have logged in and actually done the stuff.... it can be very difficult to control in a face-to-face session, so if you let them people lose in a session where they don't have to attend and we're not asking for any evidence that they've done the online material and there are no sanctions if they don't do the online material, then… I would suggest that the incentive is there for them to go shopping in Chester rather than do the online stuff.*
>
> (Dept. B / Academic 3)

> *It's like they're trying to catch you out to make sure you've read it and covered that lecture and at other times it's like go home, you've got two weeks to do all this… different lecturers will try and see how much you are actually doing at home, and if you've been on the night before, ... and I know that you, you and you haven't looked on the e-learning to prepare for the lecture.*
>
> (Dept. C / Student Focus Group, St 2)

Awareness of student selective engagement in online materials gave rise to a situation whereby both educator and student were aware that expected work had not been done, yet both parties appeared complicit in ignoring the fact, as noted most clearly in department B from comments such as:

If I don't test them after that event, and there is very often no time to test them, after the event, then they know ... it ... I'm playing a game too, I know they haven't done it, and they know they haven't done it, and we don't mention it. (Dept. B / Academic 4)

I'd be interested to hear their opinions on it as well because they probably know that we don't do it. (St4)
But we know, we're not going to tell them that and they're not going to tell us are they? (St2)

(Dept. B / Student Focus Group 2)

Despite the overarching educator controlled approach to e-learning, educators appeared to justify this apparent distancing from the issue of student selective engagement through references to an adult learning philosophy and ownership of learning remaining with the student, for example:

It was very much sort of, this is the online learning if you do it during the day that's entirely up to you...if you do your shopping and your cleaning and end up working till midnight then that's up to you, as long as you do this activity before we meet again, that's entirely up to you…and it's another thing that they're grownups.

(Dept. C/ Academic 2)

My impression is that not all students can time manage or see the benefits.... so... are less likely to access the resources as we would hope... but that's their choice, it's their degree.

(Dept. D / Academic 2)

Although the authoring and provision of comprehensive additional reference materials within a module web space was repeatedly commended on by educators, differences in educational philosophy and teaching strategies when authoring e-learning exercises or materials also produced disagreements between educators; with some questioning the commitment to teaching of colleagues who they perceived as engaging less in facilitative e-learning, as noted by:

I would suggest some staff see that as an easy way out of not going into classroom….yea…or guided study, read that online, well it isn't.

(Dept. B / Academic 1)

Sending them off for long periods on placement is a challenge, but sending them off needlessly when they should be in to do guided study is just not appropriate, especially in the first year when they need your support a lot.

(Dept. A / Academic 3)

(ii) Vulnerability

Whereas positive attitudes to provision of e-learning materials produced confidence in educational provision and student experience as noted most explicitly in department D, negative views on e-learning pedagogy produced feelings of vulnerability in both educators and students. Educators expressed feeling personally vulnerable to student and colleague criticism and poor module evaluation, for example:

> *She's quite interested in e-learning and all different learning methods, so she put quite a big proportion of her sessions via blended and e-learning and her module got slated, and I mean slated. So much so it had the module leader in tears and it wasn't warranted. So she thought she was being quite savvy within the system and I mean it was like, she can't be bothered with us, she doesn't pitch up, she just doesn't attend lectures and we've had no support, it was much more than that, but that was... the perception of the students!*
>
> (Dept. A / Academic 2)

Educators also felt vulnerable to embarrassment if their lack of understanding of current e-pedagogical models or confidence in their information technology skills and ability to use equipment or e-authoring functions of the VLE was exposed. This vulnerability was increased where educators perceived the students to be more technology literate than themselves. Vulnerability was also heightened in anecdotes of unreliable information technology equipment or software compatibility, leading to further embarrassment in front of a class. This in turn resulted in educators further preferring to teach in a physical classroom with limited interactive technologies such as the PowerPoint presentation package. Furthermore, greater levels of open and explicitly recorded communication afforded by e-learning platforms and social media produced fear in some educators of being negatively discussed online, as indicated by statements such as:

> *I'm not sure you know and obviously I'd get very upset if I knew they were saying things about me because you know,* (frustrated) *dam it don't you know how hard I work! But, then... the other business thinks you know I'm not going to please everybody.*
>
> (Dept. C / Academic 3)

As reported in the previous section on the educator/ student relationship, students also expressed feelings of vulnerability in relation to being found professionally unsuitable if something they communicated online was deemed inappropriate or taken out of context. Fear of embarrassment over asking a 'stupid question' (dept. A & B student

focus groups), as perceived by educators or peers, appeared heightened when communicating over the module discussion board. Second and third year students also felt vulnerable to embarrassment if a lack of knowledge on areas such as accessing module resources and undertaking database searches was exposed at a time when they perceived educators to expect such a level of knowledge. This in turn made students reticent to seek help of module leaders, and more likely to approach peers via external social media, as illustrated by:

> *And we can be like "How do you reference this guys"? And we all help each other whereas I think if it was in the discussion board where the lecturers could view we'd be, you know, they've been teaching us this for ages (laughs – why don't you know!). It does make you feel like "Oh can we ask that" you know.*
>
> (Dept. A / Student Focus Group, St 2)

Students also expressed feeling vulnerable to gaps in practice knowledge expected by placement mentors and supervisors due to not sufficiently completing and/or receiving feedback on e-learning earlier in their programme.

> *You can read it, but you read it your way, and they aren't there to tell you this is how you even say it, you know?... (St6)*
> *So we're gonna get laughed at aren't we by mentors, cos we can't even say the words right. If we had had a ... somebody there to talk it through we'd know for sure. (St5)*
>
> (Dept. B / Student Focus Group 3)

It appeared however, that for some student respondents, feelings of vulnerability borne of having previously not engaged sufficiently in e-learning, was in itself insufficient motivation to engage in e-learning in the future.

(iii) Motivation

Positive motivation, provided by educators to encourage students to engage in e-learning was discussed by participants in terms of providing interesting e-materials and enjoyable exercises which students perceived as relevant to professional outcomes. The perceived absence of these motivating factors were considered by students and some educators as de-motivating; as suggested by:

> *There's no spontaneity or excitement. No wonder they have no motivation to do the online stuff.*
>
> (Dept. A / Academic 3)
>
> *Would you do e-learning all day? In reality, would you get up at nine, three hours in front of the computer, oh now its lunch time, another three hours on the computer... you wouldn't would you? Who would after a*

hard day, or morning of listening, go home and go, now I'm going to go to a dry computer and do another three hours.

(Dept. B / Academic 4)

I think it's because you are excited when you first start, you don't really want to be learning about how to access an online journal or book. You want to be learning about like the [names profession] *stuff. (St1)*

(Dept. A / Student Focus Group)

Educators from department B questioned if perceived relevance to practice was sufficient motivation for students to engage in self-directed e-learning when the point of qualification appeared several years away, which seemed to be corroborated by students, as the following quotes illustrate:

I'm trying to motivate students with the 'You will need to know this to be a [names professional group] *with first years and they've got three years to go, so it doesn't always motivate you does it!*

(Dept. B / Academic 2)

It's just not important yet, I view it as being not important which is wrong however I'm aware that it's wrong but it's not marked.

(Dept. B / Student Focus Group 2, St 2)

The above reference to e-learning exercises being 'marked' and the link between e-learning engagement and a perceived relevance to module assessment was reported in theme 2: *Educational culture.* It was noted that when some students fail to see relevance, they prioritised their efforts away from formative e-learning exercises and toward summative assignment writing. A lack of relevance or contribution towards final modular assessment therefore reduced some student motivation to engage in e-learning exercises or reading as their educators expected.

For educators and students in department D, an important motivator to engage with module web space resources was the provision and access to targeted newsfeeds on leading edge research carried out by international experts, as noted by responses such as:

I think it gives a sense of excitement to the students as well if they feel, you know, this... there are researchers you know, in America and Australia who have just discovered this and you, the student, you already get to know about this.

(Dept. D / Academic 2)

However, both departments A and D considered the human interaction and instantaneous feedback responses provided by the physical classroom to be a greater

motivator for students to engage in collaborative learning, than the use of electronic resources. Department D respondents also firmly believed face-to-face student interaction in class was a key deciding factor for students to attend university. For department D educators in particular, this view led to the development of their information management use of module web spaces noted in theme 1: *Defining e-learning*. This perception of the student and what motivates them to learn was encapsulated in the following interview response:

> *I think they're expecting the mix but I think face-to-face is absolutely crucial or they might as well you know, do Open University and distance learning. But they come here for the whole student experience.*
>
> *And maybe going to class is a social event as well, they catch up with their friends and... it's an event and it kind of creates memories that they can draw on during the exam as well and I keep... I always explain that to the student. It's not...the class isn't just the dissemination of information. It's a...kind of a much richer memory of the content and the event and it's an inspiration, it's a motivation to learn. Their friends are there and to me contact time it's crucial.*
>
> *And they've moved, they've moved here. They live on campus. Why...why would they want to ... sit in their little rooms when they can get together on campus?*
>
> (Dept. D / Academic 2)

When analysing the qualitative data, a distinction was drawn between 'student motivation' whereby the educator provided reasons and incentives for the students to engage in e-learning, and 'student self-discipline' whereby the student possessed the ability to do what was required without needing to be urged by the educator.

(iv) Self-discipline

From the discourse it was seen that both students and lecturers acknowledged that regardless of the level of motivation provided, students also required self-discipline to engage with e-learning materials independently of educator and peer contact, as illustrated by such comments as:

> *I think your best intention can be to sit there and be like, yeah definitely right I'll look, I've got the greatest intentions to come home and do that and you'll get home and other things-(St1)*
> *Life takes over...(St6)*
> *But don't you think that's about self-discipline? Because it works the opposite if not, like, I'll just shoot to the shops, or pick the kids up. (St3)*
> . (Dept. B / Student Focus Group 2)

If you want to be here, then you should be willing do the work to be here, so I think… you should be wise to it, you should do the e-learning and guided study… you should have the discipline, and manage your time to do it.

(Dept. C / Student Focus Group, St 5)

I find it....erm... quite difficult to sort of carve that time out. I haven't been that disciplined about it and I do think you need to be quite disciplined, for e-learning.

(Dept. C / Academic 3)

Department B student responses suggested a blended learning strategy which required students to engage in educator directed e-learning exercises following an introductory lecture on a specific topic. However, many students appeared dependent on their educators to ensure they completed e-learning exercises, and expressed the need for regulation through deadlines for submission and review of work in order to counter personal shortfalls in self-discipline; for example:

There was a lot of sessions in the like, the afternoon and they'd say oh you've got some e-learning to do or you know, you've got some study to do at home or like guided study or people obviously take that as then they have the afternoon off whereas what they actually meant to say was you've got work to be doing online, to be fair, if they had said ... you can go home but there's work to be done by such and such a deadline online, people would've been more committed to, instead of going out to the cinema or something you sit in and do the work don't you? (St4)
Yeah, personally, I knew there were lecturers in our first year who, personally... I was not scared of them, but you knew you had to be on the ball, cos they would be shouting your name out of the register and if you didn't know the answer.... you would learn next time that you should have had the answer, and in my opinion, that worked for me, because it made me do that... pre reading kind of thing, because, I know I was going to be asked questions and I should know the answers. (St2)

(Dept. B / Student Focus Group 1)

In light of the dependent nature of their students, it appeared that some educators in departments B were aware they were providing insufficient positive motivation for students to fully engage in the e-learning materials they author. Some had developed more controlling module structures and authoritarian teaching practices to ensure student completion of e-learning work, as illustrated below:

what you do with the theory is the student have to go online and complete the theory on the website and print off a certificate that they then have to bring to the practical session… if they don't bring the certificate with them then they don't do the practical session and if they don't do the practical session then they don't go into practice, so there's

> *some pretty big incentives there for them to actually complete that and that works really well, because they're going to get checked up on*.
>
> (Dept. B / Academic 3)

> *So with e-learning sometimes you have to say to them, look I know this is important enough that you need to know it and I say to you that in a fortnight I will be taking feedback, and if any of you miss that session, please be aware that I will give you an opportunity the week after to talk to me on a one to one in front of everybody else, so that sort of thing... if it's... I know they need it, I have to pick up on it,... then I have to be heavy with that, I have to be heavy with them*
>
> (Dept. B / Academic 4)

Other educators within the department maintained a reliance on the student's own self-discipline to complete the required work, based on notions of an adult learning ethos and the need to develop future professional responsibility, as encapsulated in the following example:

> *We say to students, you are a* [names professional group], *you're going to be responsible, these are things that the* [names professional body] *says you need to know, we provide the opportunity, we don't provide the knowledge and don't expect to chase you… we will guide you and support you, and if you want us we will be there to help you on this journey, but we're not going to tell you the answers, and I think it helps people to see that actually they're in charge of their own learning.*
>
> (Dept. B / Academic 2)

The view that students required greater levels of self-discipline when engaging in e-learning was noted to a lesser extent within the department C student and staff narratives, but minimally so in department A and it was absent from department D.

(v) Consumerism.

The final code included within the *Affective* category of findings was *Consumerism*, meaning the view that students were paying for an educational product and as customers had the right to challenge the standard of delivery. This view had a notable effect on the way in which educators and students engaged in e-learning and felt about the feedback they received from each other.

With the advent of government initiatives such as the National Student Survey and Key Information Sets, the notion of students as paying customers was frequently mentioned in both student and educator respondent narrative. Due to negative student

feedback on e-learning sessions, the department A undergraduate programme delivery team chose to revert to predominantly classroom based education. This appeared to be irrespective of similar or slightly improved module summative achievement, and was justified as 'giving the students what they want' (Dept. A / Academic 3) as opposed to being based on pedagogical reasoning. Educator concerns about consumer negative feedback was linked to concerns that the senior university management team motivation for increased e-learning related more to cost efficiency than pedagogical innovation and improvement. Educators from all four departments raised concerns that whilst students wanted, and positively evaluated high quality online learning resources available on demand, they may have also viewed the introduction of a distance style of e-learning as financially driven and not representing value for money. Such concerns were encapsulated in extracts such as:

> *Sorry to sound cynical, but I think it has more to do with the university saving money, and decreasing our workloads than it has to do with quality of teaching, and the students are not stupid, they see that. No more handouts, print your own, these sessions are now self-directed study. They get annoyed.*
>
> (Dept. A / Academic 3)

> *You're there... and you're paying fees for the course, so to me you should have a tutor explaining things and going through things with you.*
>
> ……..(Dept. B / Student Focus Group 1, St 1)

> *One thing we were told last week, not in these exact terms, but it was that because the NHS funds our course, we should be grateful for whatever can be provide, but in the same way, if we were paying for our tuition fees, we would make more of a stink about all the stuff online, but because we get it for free, we kind of like....oh well.... (St6)*
> *No, just the tax payer (St3)*
>
> (Dept. B / Student Focus Group 3)

Corresponding educator views were present within department B, although a mix of views were also apparent, with some educators rejecting a student consumerist argument in favour of advocating for means justifying ends and providing the ultimate benefit to programme learning outcomes. For example:

> *I also think it's interesting that we're obsessed with student experience because actually what we should be obsessed with is student knowledge, student performance and student… do you know what I mean? If you say that because I enjoy something doesn't mean it's the best way for it to happen, you know, I enjoy lectures when they make me laugh, but it doesn't mean I've learnt more.*
>
> (Dept. B / Academic 2)

Similar mixed views were present within department C educator and student respondents; whilst department D educators rationalised their information management model of module web space provision by reference to ensuring high student satisfaction scores on the National Student Survey and meeting student expectation for class based interactive learning. The departments consideration of student consumerist attitudes focused more on e-learning used to further enhance classroom based learning and '*liven up lectures*' (Dept. D / Academic 1) whilst remaining aware of the need to manage student expectation of access to almost immediate feedback and advice via information technology:

> *The kind of drift is very much towards...you know...actually we've got to give the students what they want… because they're customers, actually that is pushing us towards having good provision of direct person to person contact, even if it is via the medium of an email*
>
> Dept. D / Academic 1

As noted in theme 2, department D students appeared most relaxed about making informed choices as to whether to attend lectures or rely solely on the e-learning resources depending on their opinion of the quality and likely level of interaction by the educator, and as such, provided the most consistent consumerist views of any student focus group

Having considered the affective category within this theme, the final category reports on challenges reported by educator and student respondents.

6.4.4: Category 4. Challenges

Participants frequently rationalised maintaining physical over virtual education by reference to shortcomings in the university's supporting technical infrastructure. Respondents also reported a number of educator and student specific challenges to e-learning engagement. Educator challenges fell into three codes, namely Educator time, Training, and E-competence. When considering student specific challenges, similar codes of Time management and E-competence were identified.

i. Educator time

Educators across all four departments made repeated references to the challenge of finding sufficient time for e-authoring, e-learning facilitation and reviewing online

learning materials. Educators across all four departments discussed concerns that student expectation on response times to email queries had the potential to become unrealistic and unmanagable, an example response was:

> *I make a point of answering each entry on a discussion board and it takes ages. When students email me, I always get back to them ASAP, and they like that, but sometimes they email me for information that's already up there, but which they can't be bothered to look for. That's annoying, and I've not got time for that. I suppose it's part of their 24/7 instant information culture,* (Dept. A / Academic 1)

When considering cost of e-learning, educators felt that university workload calculations underestimated the time required to engage in e-learning. A lack of time also proved a frequently cited reason why educators across all four departments chose not to consistently promote the use of discussion boards within their module teaching strategies; for example:

> *No I mean I have to confess... I am probably... a bit, a bit relieved that they haven't taken to the discussion boards, because obviously I can remember* [names previous e-learning coordinator] *used to say, 'oOh it only takes fifteen minutes a day' and I used to think, well you might have fifteen minutes a day, but to jump around through all the different things that I'm doing, to then go on to module space!*
>
> (Dept. C / Academic 3)

Dependent on the pedagogical stance discussed in theme 1, there was an expectation by educators holding a non-communication, less social constructivist view of e-learning that an initially large investment in time when authoring e-materials would result in time repeatedly saved during future deliveries of a module. This view was strongly rejected by others, who cited the need for constant review of materials and need to facilitate online discussion as causing continued and costly input of time. These views are encapsulated in two quotes from the information technology support staff within the departments:

> *What they always sort of get to is the fact that it's gonna take a long time and they just see this all the time, it's gonna take time, take time, it takes more time, it takes more time, it takes more time, and I think to get across to them that you can save the time but you've got to spend the time in the first place and then once you've done it once, you just use that same process again and again.*
>
> (Faculty Information Technologist)

> *It is intensive at the beginning and I suppose in a way you're having to prep your lessons then for the rest of that module. I wouldn't say it saves time the next time you run out because you've to review everything you... to make sure your links work, you've to go through it all, you've to*

update, you know when you update, like videos, when I update my... If anything, it's more labour-intensive.

*(*Dept. B / E-learning Coordinator)

The above differing views both stemmed from a view of e-learning as information management incorporating reusable independent learning exercises, rather than e-communication and facilitated knowledge construction. Furthermore, educators who saw e-learning through an individual and independent distance learning model, potentially substituting for class based sessions to reduce the time pressures on educators, conflicted with the views of other educators who saw e-learning as pedagogically guided communication, and highlighted the importance of facilitator availability and online presence during an e-learning timetabled event.

For some educators within department B, the role of the facilitator during online discussions was pivotal to the pedagogical benefits of e-learning and worth the investment in time. For other educators, an inability to directly facilitate student engagement appeared to be rationalised as inevitable, given the competing demands on educator time whilst the students were engaging with timetabled e-learning tasks, as the following passages corroborated:

You know even if, even if it is allocated time wherein you know our university timetable and makes you like go to the library, but if there's someone actually going around like the lecturer they're not actually teaching us but they're saying do you understand this, did you get onto it okay, is there anything I can help you with, that's much better than them saying I'm going in my office you know where I am, do you know what I mean.

(Dept. B / Student Focus Group 2, St 4)

We don't sit at our desks waiting for anybody in case they phone us with an issue on that day, we don't. We think, oh they're out, so I'll go do interviews, or they're out so I'll take annual leave. So we are not there as a support for that time period.

(Dept. B / Academic 4)

A lack of time to engage with e-learning included statements that time pressures also prevented educators from gaining the pedagogical knowledge and technical training required: a typical response was:

I mean, there are courses out there, within the university we can access, but it's always about time. I've no time to do those courses.

(Dept. A / Academic 3)

ii. Educator training

Educator respondents from department A, B and C voiced a view that training in the use of the VLE e-authoring platform was insufficient. With the exception of department D, most educators interviewed had experienced no e-learning development education, with many attending workshops dedicated to e-authoring as opposed to e-pedagogy, as highlighted in the following statement:

> *No, there's been no training since, before or after. Oh I tell a lie, they put on, it was one of the away days that they put on, they did put some sessions on, but basically those sessions, although they were very very helpful, they were more to do with loading stuff onto the module sites and it was more to do with that, but they were handy because we never had any of that beforehand, but no, not good for e-learning. There was no backdrop to them, there was no research or no evidence saying well it's been studied, it's been shown to demonstrate that learning was affected by 10%, 20%, if you use these types of techniques.*
>
> Dept. A / Academic 2

This perception of a lack of training and preparation for educators was prevalent in departments A. B, and C, despite the university providing fourteen multisite workshops plus guidebooks on the use of the Moodle VLE over the data collection period. Educator uptake of the workshops over the same 12 month period was reported by the workshop delivery team as approximately 30% of university educators (field note entry following discussion) with educator study respondents citing a lack of time to attend the workshops and an intention to rely on the guidebooks and seek help from colleagues as needed.

A pedagogically focused module entitled Technology Enhanced Learning, Teaching and Assessment (TELTA) was also delivered twice during the academic year. However, attendance on the pedagogically focused module, in either the credit bearing or attendance only versions, also proved low across three of the four departments studied, with only department D having the majority of educators undertake the course by the year of data collection. From a review of the departmental meeting minutes, the TELTA attendance appeared to have been driven by the head of department proactively and persistently advocating the course at department meetings and staff appraisal, as opposed to the other departments, whereby examination of meeting minutes over the same period, showed cursory or no reference to the TELTA programme on offer.

Within the faculty containing departments B and C, where the majority of pedagogically driven e-learning use was attempted, a Masters in Education programme was delivered and accessible by all department educators. The programme contained well populated module web spaces, providing a wealth of learning resources. The programme specification did not contain a dedicated module focusing on e-learning as a pedagogy or method of teaching, however it did contain three sessions within the programme specification and published timetables with e-learning or TEL within the title. This finding was also highlighted during the faculty e-learning coordinator interview:

> *They're insisting on teachers, you know, Cert Eds or Cert... you know MEds... they insist on that, and yet it was only through me approaching* [named lead educator for MEd] *and saying "What's your e-learning on MEd" and she said "none" and I said "do you think that needs addressing?" that I now teach one session on four modules. One session, all it is an introduction to e-learning online, and an introduction to e-learning. It should be a module on electronic learning.*
>
> (Dept. B / E-learning Coordinator)

For one respondent from department C, the non-formalised approach to familiarisation with the skills required for e-education meant she unwillingly became a frequent support reference point for her colleagues:

> *Generally I think people are ... unfamiliar with computers, with how they work, and how we can use them. I mean basic things. People come to me all the time with, how do I do this... some of the most basic things, and to be honest I can do it, but I don't know the terminology for it, so I couldn't .. I'm not an expert, but the majority of them will come to me and ask how do you do...to the point where it drives me potty.*
>
> (Dept. C / Academic 3)

iii. Educator e-competence

In addition to the above perceptions of a lack of time to train for and engage in e-learning, educators self-reported varying levels of competence in the application of e-learning delivery. For the majority of educators interviewed, a perception existed that the university appeared to assume an ability to engage in e-learning by virtue of the implicit skills of being a university lecturer. Educators from departments A, B and C stated that much of their familiarity and level of competence in using e-learning tools have been developed through self-application and experimentation.

They have just introduced it and assumed people will just pick it up, erm, I'm self-taught with word processing and when you think that you're talking about a professional group here who are not administrators or secretaries, but their everyday tools of working now are the tools of a secretary and administrator and I think the same concept is exactly the same with…you know... e-learning technologists... that's their learning field, you wouldn't expect an e-learning technologist to be able to give an intramuscular injection.

(Dept. B / Academic 1)

So everything I know about computers I have pretty much learnt by having to apply it.

(Dept. C / Academic 3)

The perceived lack of time available to learn about e-learning and engage fully in the process contributed to insufficient educator technical competence in utilising the tools and functions available within the VLE. Furthermore, with the exception of department D, acquisition of pedagogical knowledge and understanding of differing e-learning models and approaches appeared to be spearheaded by those educators with a personal interest in the delivery method, as opposed to being introduced through adoption of formal professional development strategies or compliance to the faculty teaching and learning strategy. The responses from the educators interviewed triangulate with the results from the quantitative questionnaire, in that the level of educator interest, confidence and use of information technology outside of working life, tended to mirror the level of information technology use within module delivery. Without an understanding of e-pedagogy, educators, particularly within departments B and C, tended to assess their e-competence in terms of such abilities as uploading reading materials or reflective exercises on the module web spaces, or attaching links to third party open source materials. For some respondents the level of e-competence contributed to variability in pedagogical understanding and expectation of student engagement, as suggested by the following statements:

I don't know that we sat down as a cohort of lecturers and thought why are we doing e-learning, I don't think we did, I think it just came in, at the time, and we were just told do it, but we weren't told how to do it, when to do it, which level to do it a… whether you build it up as a student progresses... we didn't think about it.

(Dept. B / Academic 4)

So are there any other factors that help or hinder e-learning for yourselves or your students?
I think from our point of view, I think it's about not understanding what.... how to use it,...

Is that understanding of pedagogy or using of the computer and Moodle?
I think for most of us it would be the using of the technology. Erm... and I think the pedagogy is way down the list, we're not that ... good at thinking about what we are doing and what is underpinning it.
(Dept. C / Academic 3)

Student respondents appeared aware of the variable competencies held by their educators when using the VLE functionality, and were largely sympathetic and understanding of difficulties faced, particularly with regard to reliability of the infrastructure. It was however, seen as a required skill of their educators as the following passage highlighted:

I think they try their best don't they. I'm not brilliant with computers so I do feel sorry for them when they have to put all their stuff on. But they should really know because it's within their job role. (Laughs). No I'm not being funny and I don't want it to sound horrible but sometimes I do feel a bit bad like they'll try and get something up and there's confusion of how to do it and sometimes these computer systems don't work and we have to get technology people. (St2)
Yeah, they are not the most confident. (St4)
So there's a lack of confidence?
Oh yes, definitely. (St4)
And they admit it to us. They do say to us as well "Oh we're a bit technophobe", do you know what I mean? So they do admit it to us. (St1)
(Dept. A / Student Focus Group)

The imminent transfer from the previously unreliable VLE to a Moodle based platform was seen by many educator respondents as an opportunity to improve familiarity and competence in e-authoring, plus improve the quality of the student e-learning experience. Typical comments were:

The move over to Moodle should make things better too, and give us a chance to refresh what goes where and how, so that will be useful.
(Dept. A/ Academic 2)

She is our champion, she along with a couple of other people I'll mention have been going to the Moodle link talks, as you know all that, Moodle is going to be our e-learning tool, and the feedback I'm getting is, it's a better tool than... emm.. what we've got at the moment.
(Dept. C / Academic 1)

The focus of narrative in relation to the Moodle move however, remained primarily on VLE functionality as opposed to educational philosophy, culture, or the potential implications for e-pedagogy.

Having considered challenges faced by educators when engaging with e-learning,

challenges are now reported for the student respondents.

iv. Student e-competence

Student competence in the use of technology was seen as an important future professional requirement by educators, and was present as a learning outcome within three department undergraduate programme study skills modules delivered in the first year. The focus within these modules was on giving the student an ability to navigate around the VLE, search online databases for information and reference academic sources correctly. In addition, the formative and summative assessment strategies of two of the three module, required the student to demonstrate sound use of library search facilities and a word processing package. An introduction to e-learning and e-learning underpinning pedagogy were not evident within any of the first year modules across the programmes reviewed in data set two. Some guidance materials were available for students to access regarding the module web spaces and information management functionality contained within the VLE, however educators appeared to assume, rather than confirm, student understanding of e-learning as opposed to technology enhanced learning; or considered it unnecessary to make such a distinction.

A majority of educator respondents from all four departments commented on the variability of student competence in using information technology. Department B educators discussed this variability of competence observed across large class sizes, ranging from students unable to access the Moodle website to others who engaged to such an extent, they could listen to the lecture, 'tweet' (online message) comments, and search on topics during class simultaneously. For example:

> *Yes I think when you've got such large cohorts; everybody has got different levels of ability. And I think it is truly about levelness and identifying. Some can't even switch on a computer to get on to SharePoint, never mind doing something more complex. Whereas you've got your other students that will have all of it, they'll be in class, they'll be looking up stuff on the Internet, they'll be keeping their eyes down at the same time you are discussing it. "Oh you know you mentioned that I might look that up afterwards" and by the time I have done the lesson they have found it out and responded back!*
>
> (Dept. B / Academic 5)

Despite the substantial focus of the study skills modules on information management skills, students from across all four departments commented within their focus groups on a mixed level of confidence in utilising online databases, other search functions,

and differing aspects of Moodle interaction. Such anxiety in regard to competence was again most prevalent in department B student responses, with department D students suggesting the most confidence through their narrative.

Department A student focus group was particularly open in relating a lack of competence in navigating around the module web spaces and searching for information, typically stating:

> *It's quite complicated I think. You've got to find your right group, you've got to find your right area, you've got to go to this bit that bit. It's quite complicated really. (St3)*
> *I don't know how to get onto the CINAHL and stuff, like, unless I go through it like on the reading list and stuff. (St4)*
> *Yeah I don't know how to access it. (St2)*
>
> (Dept. A / Student Focus Group)

The same low levels of VLE navigation competence were evident in department B students, with responses suggesting perceptions of insufficient educator support during student engagement with the module web space during year one. For some, but not all students, competence improved with growing familiarity over time, as exemplified by Focus Group 3 participants:

> ***How ready did you feel you were for e-learning?***
> *Not at first. It started in first year and I hadn't a clue what to do (St4).*
> *I don't know where a lot of the things are, and tend to come around it a long winded way, I'll try ten different things and then eventually come across it, cos it never seems to be the same twice. (St1)*
> *I think like the sheer velocity of the stuff that's on there created a lot of information and it was, you couldn't find your way around doing it, how to get it to work, and how complicated, I think as it's gone along it's got a bit easier. (St4)*
>
> (Dept. B / Student Focus Group 3)

For department D educators, discussions on student e-competence were less about accessing and using the technology such as article data bases, and more around the quality of the searches that were performed by the students using online resources:

> *Students are familiar with the basic technologies. That holds no fear for them, and even the more mature students soon catch on at that level and quickly join the Facebook Twitterfest culture. But they are not prepared for how they use that I.T know how during an academic exercise. For them.. all too often.. a literature search is superficial... a quick search of Google returning no results does not mean there are no papers on a given topic out there. Wikipedia is not a good starting point. .. ever...Ahhm ... have you experienced similar? .. yes? Well, that is*

certainly one area in which they need development. They have to be moved away from the instant gratification, superficial searching mentality.

(Dept. D / Academic 3)

Department D students differed from students in departments A, B, and C in that they did not raise issues of personal information technology competence during their discussion group. The focus group participants strongly advocated that the increased accessibility and speed of searching was a major benefit of their e-learning resources. At no time did the student participants raise concerns over the quality of their searches, possibly suggesting a lack of awareness by students of educator concerns, or a decision not to discuss the issue with the author during the focus group.

I mean I know that the library is open most of the time but if you had to get hold of a book or a study it would be ridiculously like "Oh I've got to go there now" or "You've got to get here", it takes up time. Whereas especially for the dissertation, the amount of research you've got to get hold of and add 50 odd references of studies. And to think in an hour I went through five or six, and I was able to scan and search for key words and it was just so much easier than having to pull out a load of files and find it and go "Oh well I've wasted twenty minutes finding one study".

(Dept. D / Student Focus Group, St 3)

v. Time management

As the previous excerpt suggested, time management was an important factor for students in the perceived benefits and challenges of using e-learning. Students within the department D focus groups highlighted the time efficiency of online database searching over physical library searches; however, although often agreeing with this view, students in departments B and C discussed difficulties encountered with managing their study time in general, and the time they were expected to dedicate to e-learning at home in particular, as the statements below exemplified:

So, you know, you wouldn't bother looking at them then because you try at home and you couldn't source them and you'd mean to go back to it but you then couldn't get, you know, you just didn't get the time to go back, you know, once you'd gone there and couldn't find it, it was like, you know.

(Dept. B / Student Focus Group 1, St 1)

It's, it's estimated to take you an hour, whereas if you go on there and it could be three hours and if I don't pay full attention for that it could take me a day, so.

(Dept. B / Student Focus Group 2, St 3)

So if you had a guided study session, you'd do it, not necessarily during that time, you'd do it some other time?
I do it at other times. (St3)
I run out of time. (St4)

(Dept. C / Student Focus Group)

It appeared that a significant challenge to student time management was an underestimation by educators of the time required by their students to engage with and complete set e-learning tasks. Students often articulated the belief that time estimated by educators to complete an e-learning exercise was based on the educators' ability to complete the task, rather than on the less expert abilities of the students. Students believed that this practice produced unrealistic work expectations by the educators and increased stress for students, typically commenting:

I think what some lecturers' think we can do in a day is ridiculous. (St1)
GROUP: [talking over each other] *general agreement.*
I think some lecturers fail to remember that they have been doing the job about 50 years and their knowledge base is amazing, that they can do the job well and maybe we are not quite there yet and they're expecting we should be there already, we've been doing it two and a half years! (St1)

(Dept. C / Student Focus Group)

For beneficial time management opportunities to be realised, students felt the e-learning materials needed to be timed more accurately and realistically. To support student time management efforts, e-learning exercises needed to be uploaded to the module web space sufficiently early to facilitate those students who wished to engage with the materials earlier than planned by the educator; as suggested by statements such as:

Sometimes they put it online, for that day, like the day before but you've had like say the week before when we could have done it, when.... do you know what I mean… I'd rather have done it the week before, but it wasn't there.

(Dept. C / Student Focus group, St 3)

However, such student requests were viewed by some educators as risking overwhelming the students with material, as suggested by educators discussing e-pedagogy in theme 1 and student statements such as:

I feel like when they are putting it up as you go along they are either putting it up the day before or the day after. And it's like "Well, can you not put that up like two weeks before?" So it's a little bit in advance but not too in advance.

(Dept. A / Student Focus Group, St 1)

Educators from department B assumed that students would be more effective time

managers when studying at home for example:

> *I..like everybody else, know I get more done at home, than I do at work, so if I was a student, I'd know that I would get more done at home than I would in the classroom, so in that respect the fact that you can manage your own time...erm.... is a benefit*
>
> (Dept. B / Academic 1)

However students from department B and C reported this was not necessarily the case, as competing demands often compromised time available for study outside a standard campus working day. Typical statements were:

> *I put other priorities like I've got to work to pay me mortgage or got the cleaning to do, they* [e-learning exercises] *then come into it, you know what I mean?... you don't mean to but if I know I am somewhere at a certain time, you know.. then you've made that time… You're there...*
>
> (Dept. B / Student Focus Group 1, St 1)

Students from department D did not raise concerns over last minute or late uploading of e-learning materials challenging their ability to time manage, possibly due to the information repository design and way their module web spaces were utilised. Department A students however, did point out that receiving additional work as a penalty for missing attendance study sessions (noted in theme 1 findings) further challenged their capacity to manage time. For example:

> *Yes, I missed one lecture and I have just been putting it off and off because I just think "Oh my God". They give you an essay for missing a class, or a form of summative assessment at the end. So that approach doesn't really help.*
>
> (Dept. A / Student Focus Group, St 1)

Some students also highlighted the challenge of engaging in discussion boards if they arrived late to the discussion, which often moved forward at too great a pace for them to meaningfully catch up, negatively affecting their confidence to break into the discussion and ultimately the student's level of involvement. For example:

> *With the discussion boards as well I found by the time I got down to doing it people had already spoken a lot on it and then you feel like you're– (St1).*
> *They've been finalised, haven't they? (St4)*
>
> (Dept. B / Student Focus Group 1)

It appeared therefore, that students required significant time management skills as well as previously reported self-discipline and motivation if they were to effectively engage in discursive elearning.

6.4.5: Summary of theme 3 findings

Reasons why participants within the study engaged in e-learning in the way they did were themed under the heading of *Builders and blockers*, and categorised into four areas of I*nfrastructure, Preference for physical presence, The affective domain*, and *Challenges*. Within I*nfrastructure* little differentiation between the concept of 'e-learning' and the physical IT infrastructure was noted. Shortcomings in VLE functionality and reliability prior to data collection negatively affected educator and student views on e-learning. There was, however, general optimism that adoption of a new VLE platform would enhance the e-learning experience. Further infrastructure challenges such as disparity of physical resources across differing department campuses also reduced the perceived value placed on e-learning by educators in the eyes of students. Some educators, particularly within department B, questioned the merit of using e-learning as a means of managing short notice timetable changes due to curriculum delivery issues and the challenges of sequencing blended learning sessions during periods when students were already separated from educator contact whilst on practice placements. Promotion of learning engagement and interaction within a large class were rationalised as reasons to adopt alternate session delivery via e-learning for some educators, yet stated as reasons why e-learning would not work in the same situation by other colleagues.

Information technologists, e-learning coordinators and library staff were identified as integral to the positive experiences gained by students and educators when engaging in e-learning. Although repeatedly praised for their essential support contributions, particularly when giving one-to-one tuition on e-authoring, the availability of information technologists was seen as insufficient due to time restriction by some educators and the technologists themselves. Role and responsibilities of the e-learning coordinators appeared contested by many educators resulting in mixed educator participant's views on their efficacy as VLE instructors or e-pedagogy guides.

Student narrative did not include reference to information technologists or e-learning coordinators, but highlighted the positive role played in facilitating e-learning by librarians. Although not a formal support role for e-learning, library staff were considered first line support for many educators when challenged by e-authoring, and

student participants when needing help with data searching or citation and reference technique. Although students from each department praised the support from librarians, they articulated mixed views as to the sufficiency of librarian led module resource and data search skills sessions at the start of the programme, considering the sessions too early in the programme for delivery, particularly without later reinforcement. As students within the focus groups progressed through their programmes, they appeared less inclined to ask librarians and their tutors to repeat information already delivered, for fear of appearing poor students, and so relied increasingly on their peers for support.

The perceived benefits of e-learning appeared to be a fundamental reason why students and educators selectively engaged. There appeared consistent agreement across educator and student groups as to e-learning benefits such as time efficiencies and ease of access to online resources resulting in high uptake of such provision; yet mixed views on the more pedagogically produced benefits such as flexibility of learning over distance and learning being owned and led by the students themselves. Many of these articulated benefits appeared to be only partially realised by students and educators due to timetabling inconsistencies and the required constructionist pedagogy being at odds with educator tendency to control student learning as identified in theme two and noted in the module reviews in data set two.

Within three of the four departments, educators expressed benefits of adopting e-learning appeared to be as much logistically pragmatic, as pedagogically focused on student experience. Educators across all four departments articulated the view that a key motivator for the wider university in promoting e-learning was a belief in reduced teaching costs, whilst departments A and B repeatedly identified the use of e-learning as a means of managing a lack of teaching rooms or unexpected staff sickness. Although of clear benefit from a resource management perspective, this judicious use of technology enhanced distance learning was often questioned pedagogically by educators and students, with corresponding student focus groups questioning their educator commitment to teach them as a result. These views however, were not noted in department D, and minimally in department C, during the data collection.

Despite the potential benefits articulated by respondents, the educator and student narrative suggested a preference for physically present learning in a classroom over virtual learning via a PC at a geographical distance. The immediacy of response to questions was key to student preference for physical teaching, as was the social aspect of 'being' at university. Educators valued direct contact with students, articulating mixed views on interacting with students through a discussion board. Some educators considered such e-learning strategies as an unnecessary barrier to facilitation and assessment of a developing professional character, whilst others pointed out the benefit of developing communication skills across a range of differing mediums. Student focus groups within department A and B articulated concerns that the educator had a professionalisation agenda and the students risked being considered professionally unsuitable due to an ill-considered written comment, which significantly reduced their desire and confidence to engage with educator monitored module discussion boards. The same fears also prevented inclusion of educators in closed student social media networks when dedicated to module topics. This finding was not noted in department D, where educators did not consider themselves gatekeepers to a profession. Students across all four departments articulated a concept of, and desire for, an educator as a knowledgeable and inspiring expert who would enthuse them to learn. Such motivation was not felt to be provided via the online materials within e-learning sessions. This culture of reliance on a physically present expert further reduced engagement.

How the participants felt about e-learning and their educators was therefore an important positive and negative influence on how they engaged. Whereas the predominantly positive views of department D students to their e-learning materials and expected information management use appeared to have little effect on the educator-student relationship, the selective engagement noted in theme two by both students and educators within departments A, B and to a lesser extent C, appeared to create tension within the educator-student relationship, as did the apparent cautionary feelings by students toward their educators' professional gatekeeper role. This finding was particularly noted within department B. Whereas positive attitudes to provision of e-learning materials suggested confidence in educational provision of online resources and student expectation for TEL, negative views of e-learning pedagogical application highlighted feelings of vulnerability in both educators and students. Educators across all four sites expressed feeling vulnerable to criticism from students and colleagues for

a lack of e-learning pedagogical and technical awareness, whereas students expressed feeling vulnerable from poorly understood knowledge when delivered through previous e-learning sessions which they considered unconsolidated. Students within the focus groups of some departments also expressed reluctance to ask for further clarification regarding use of learning technology for fear of educators, mentors and peers querying why they had not asked such questions much earlier in their programme.

Student motivation to engage in e-learning also appeared to be linked primarily to perceived relevance to the module summative assessment, and secondly to future required professional knowledge or skills. Educators however, discussed concerns that a reliance on motivating engagement through reference to practising as a health professional was too distant in time to be effective in countering any de-motivating effect of e-learning exercises carried out in isolation from a student's social peers. Regardless of the level of positive motivating factors available to the student, the student focus groups within departments B and C strongly acknowledged that external motivation alone was insufficient to ensure they engaged in e-learning without self-discipline. Some student respondents within these groups articulated they required educator regulation and structure in order to counter a lack of self-discipline. Controlling practices were adopted by some, but not all educators, as such regulation of learning conflicted with e-advocate educator views on promoting student independent learning and autonomy.

Regardless of educator debate on educational philosophy that best prepared a healthcare professional for lifelong learning, a pragmatic response to student consumerist views on how they preferred to be taught and assessed appeared to shape the design and engagement in e-learning for both sets of respondents. Both department A and D educators appeared very cognisant of the effect on National Student Survey responses from poorly received student e-learning experiences. Department D maintained a focus on provision of high quality, conveniently accessible additional learning materials to support class based lessons, with use of information technology to increase diversity and interest of the learning experience in class; whilst department A openly acknowledged a review of teaching strategy away from e-learning and back toward class based delivery due to adverse student feedback. Department B however,

appeared to challenge this consumerist response, justifying their approach to e-learning as being in the students best long term professional interest.

Consideration of challenges highlighted how perceived levels of educator time, training and resulting e-competence limited the use of, and engagement with, e-learning opportunities. Pressures on educator time available to design and facilitate e-learning appeared a significant reason expressed by educators from all four departments as to why they did or did not engage in differing aspects of e-learning practice. department D educator respondents were alone in not citing a lack of training as a reason for restrictions in e-pedagogical practice, and cited mandated training and faculty forum discussion as contributing to their department decision to maintain a pedagogically neutral information management use of learning technology. Departments A, B and C, however, did not experience such robust direction regarding training, resulting in very mixed levels of awareness and e-competence amongst educators.

Despite an apparent assumption by educators of student competence and confidence when engaging with the VLE (also noted within the questionnaire data), similar findings relating to mixed levels of e-competence and time management, were present amongst the student focus group data. Students from departments A, B and C reported varying levels of ability to navigate e-learning exercise materials, and reluctance to admit this challenge to their educators. Students also discussed challenges of completing e-learning within the expected timeframes, with some students considering educators to underestimate time required.

The thesis will now continue with a discussion of the overall study findings from data sets 1 to 3, reflected against the original research questions and current literature.

Chapter 7: Discussion

This chapter highlights and discusses the new and deeper insights into undergraduate healthcare professional educator and student experiences of e-learning derived from the findings in relation to the literature. The chapter begins with a consideration of the overall context surrounding the case university, including aspects commonly seen in previous literature before discussing specific case-related educator and student findings. In order to weave a holistic and coherent picture of the case university, the chapter is structurally aligned to the original research questions of:

- RQ1. What definitions of 'e-learning' are held within the study population?
- RQ2a. How do educators engage with e-learning?
- RQ2b. How do learners engage in e-learning?
- RQ3a. Why do educators engage with e-learning as they do?
- RQ3b. Why do learners engage with e-learning as they do?

In order to consider the individual case data sets in detail, the discussion makes further use of specific evidence (such as an individual participant quote or specific module review), as a means of highlighting and justifying interpretations of the study findings.

The chapter is structured under the following subheadings:

7.1: Introductory overview

7.2: Definitions of e-learning and blended learning

7.3: Educator and student engagement in e-learning

7.4: Why did educators and students engage in e-learning as they did?

7.1: Introductory overview

As can happen with qualitative data findings, the current study produced findings from across the differing data sets that surprised the author (Miles & Huberman, 1994; Robson, 2011), and reshaped the author's views regarding educator and student experiences of e-learning within the context of undergraduate healthcare programme delivery. The educator and student respondents appeared predominantly positive about the benefits of TEL, However, the VLE used by the case university was about to be replaced, as it had contained an unintuitive interface and ineffective search function. This had made navigation within the VLE and location documents a challenge for both

educators and students. When analysing interviews and focus group transcripts, the findings showed that despite being enthusiastic about the proposed new VLE, some educators and students conceptualised their overall e-learning experience as one and the same with the issues facing the previous VLE, which seemed to adversely affect some respondent views on e-learning in general.

Findings in regard to e-learning benefits and challenges experienced by students and educators were largely in keeping with results from previous research. As found by researchers such as González (2010) and O'Neill, et al., (2004), the student learning experience was enhanced by the use of technology both in and outside the physical classroom. The most consistently agreed upon benefits noted across the four embedded departments included additional flexibility of study time and place for students (as noted by Cheng, 2013; Styles & Lewis, 2005; Wilkinson et al 2004) and ease of access to learning materials, (Asuncion et al., 2010, Imhof et al., 2007, Myrick et al 2011; Prince et al., 2010, and Yapa et al., 2013) and seen in data set one, Q8d and statements within data set three such as:

> *I mean with the e-learning you can do research from, you can do it at six pm you can do it at two in the morning. You've still got the same amount of access to that information and it really sort of helps you, especially if you're doing it at a certain time.*
>
> (Dept. D / Student Focus Group, St 3)

The above quote indicates that such benefits were most readily realised through an individual student accessing an information management style of e-learning, as opposed to a group of students engaged in online communicative learning. However, potential student benefits of reduced costs of travel, learning materials and child care noted in the literature by researchers such as Concannon, et al., (2005), Jackson et al (2001) and Jonas and Burns (2010) proved to be considered a potential benefit by proportionately more educator respondents than their students. This was particularly noted within department B where short notice changes or other module requirements negated any such potential savings for student respondents, as seen in Q8a and Q8b in Chapter 4 and respondent statements within Chapter 6.

The findings further matched those of researchers such as Reynolds and Fell (2011) who also noted how e-learning pedagogy was perceived to promote independent learning skills, which was a recurrent aspirational view noted in educator transcripts

from all four departments. Such views however, when expressed within the current study were very dependent on both student and educator understanding of underlying pedagogic aims and are discussed later in this chapter. Reynolds and Fell (2011) along with researchers such as Barron (2006), Nichol and Millighan (2006), Packham et al (2006) and Sit et al., (2005) all noted the importance of educator feedback in relation to e-learning undertaken independently. However, as noted in chapter Six, educator feedback on e-learning exercises proved a sometimes contested factor in student motivation and satisfaction with e-learning during the current study, as highlighted by statements such as:

> *I think what they don't like is lack of feedback, because you know, students are on Facebook all the time…. networking constantly; it's that they don't get feedback and things get lost which makes them not bother with it really.*
>
> (Dept. B / Academic 2)

> *Yeah, I enjoy e-learning for the fact that you do find things that you don't really normally know but I think the follow up and the feedback from it is quite poor.*
>
> (Dept. B / Student Focus Group 1 St 3)

The relevance of e-learning to module summative assessment called for by researchers such as Clayton et al., (2009), Nichol and Millighan (2006) and Petty (2013) was also an important factor alluded to in student discussions and will be further discussed later in regard to student prioritisation of e-learning.

Challenges faced by respondents within the current study also matched previous findings from Asgarkhani (2012), (Clarke, 2009), Owens (2012) and Van Der Merwe and Mouton (2005) particularly with regard to issues of supporting infrastructure. Whereas most students within the current study held positive views on the support available from central services when e-learning, the majority of educator respondents held mixed views and perceived insufficient time to become familiar with the virtual learning environment and insufficient support for the development of educator competence in designing and authoring e-learning materials. According to Green et al. (2006) there is a significant correlation between the amount of perceived support lecturers receive in developing e-authoring and sustained e-learning implementation. Department B and C educators were complimentary regarding Learning and Information Services (LIS) support staff, relying heavily on LIS support to overcome any competency shortfall and manage their web space authoring challenges. Educators

within departments A and B also relied heavily on library staff to deliver student VLE and search function familiarisation sessions. Some educators, although complimentary of LIS support staff, remarked they wanted more personal instruction. However, LIS support staff did not view their role as an individual coach, but as a group trainer due to time constraints. In the absence of sufficient training or individual coaching from LIS, other educators overcame immediate e-authoring competency blocks by turning to library staff for further assistance in structuring module web spaces or uploading resources. This was despite educators knowing such requests were beyond normal library staff role expectations, which was a finding echoed in a literature review into the role of librarians in regard to TEL by Ritchie (2011).

Despite proportionately having the highest number of educators undertaking a centrally delivered in-house e-learning pedagogy module, the majority (80%) of department D respondents recorded still not being confident and able to use the VLE beyond basic e-authoring functions. This may have been due to a greater awareness of the expansive functionality of an e-learning environment post course not held by other department educators, or may have been in line with findings from Hughes and Daykin (2002), Wilkinson et al (2013) and Owen 2012) that educators required both pedagogical and technical competence to succeed as e-learning facilitators. Additionally it would appear that for department D, having an increased knowledge of e-learning pedagogy was not facilitative of greater e-learning engagement using online social constructivist methods, and still led to rejection of online communication based e-learning as not required or justified for a prominently campus based student population.

The responses from department D demonstrated how responsibility for implementation of e-learning within the case HEI was decentralised to faculties and departments, however the university did have what Aczel et al (2006) termed a whole-institution e-learning implementation strategy, in that e-learning was an expected component of all programmes, and supported through centrally developed staff guidance and educational workshops. However, in what this author considered an attempt not to dictate to faculties how they should educate their students, central guidance appeared general and open to interpretation in relation to e-learning pedagogy. Furthermore, during the first year of data collection, the central university

e-learning guidance was issued within a context of substantial change for the case university as it prepared to migrate from an established bespoke VLE developed by the information technology department, to adoption of a commercially available package. Despite positive attitudes to the improved VLE infrastructure, the requirement to familiarise educators with the new VLE contributed to a greater training focus on the processes and technical aspects of e-learning delivery within the centrally provided workshops, rather than on the pedagogical underpinnings of e-learning at that time.

Although the institutional level e-learning pedagogy module undertaken by the majority of department D educators was available during the same period, uptake by staff within the other three departments was minimal. The low module uptake by educators appeared to have missed the intrinsic pedagogical motivators for the healthcare academics. According to Petit-Dit-Dariel et al., (2014) when studying information and communication technology learning practices of nurse academics, such motivators may have more to do with what was valued in healthcare professional practice (such as clinical skills acquisition, and development of professional values) than benefits such as efficient use of resources and technological innovation valued by the central university with regard to use of TEL.

Interestingly, the faculty containing departments where uptake of the central university TEL module proved lowest, delivered a successful Masters in Education. Despite this programme containing detailed coverage of philosophical underpinnings of education, including constructivism, explicit agreement on an underlying pedagogical approach to e-learning still seemed to proved a challenge for some educator respondents.

7.2: Definitions of ‘e-learning’ and blended learning

This section addresses the first research question of whether a definition of e-learning existed within the departments studied under the following headings:

- Definitions of e-learning
- Definitions of blended learning
- The relevance of differing definitions

7.2.1: Definitions of e-learning

For the purpose of the current study, e-learning was defined for the purposes of the initial literature review as: "If someone is learning in a way that uses information and communication technologies (ICTs) they are doing e-learning" (department for Education and Skills, 2003, p 1). This was chosen as a deliberately broad definition to prevent biasing the literature review focus on either pedagogical, technical or process-based definitions of e-learning. On analysis of the data sets, the definitions of e-learning held by participants were seen to contain a mixture of cognitive and social constructivist elements and appeared largely process focused in keeping with the definition of e-learning by researchers such as Dark and Perrett (2007). This was particularly notable in student definitions (n=64, 55% being process based, compared to 37% (n=43) for technical definitions, and just 9% (n=10) of definitions being communication or interaction focused). The student finding may have been influenced by their educators' views of e-learning, as educator respondents defined e-learning mostly in terms of process (44%, n=14) with a technical focus in 34% of definitions as opposed to 22% pedagogically focused definitions relating to communication or interaction. Example definitions included ones which were:

Process focused:

> *Support materials from a module are completed online and then discussed in class.*
>
> (Dept. C, Student 1)

Technological:

> *E-learning comprises all forms of electronically supported learning and teaching, the content is delivered via the Internet, audio or video tape, satellite TV, and CD-ROM.*
>
> (Dept. A, Student 11)

And, Pedagogical:

> *Using a VLE to engage with students. This goes beyond 'reading on-screen' and includes 'dialogue' between students and the teacher. E-learning includes directed tasks and reflections.*
>
> (Dept. C, Educator 6)

These mixed definitions of e-learning appeared largely similar across all four departments and in keeping with definitions noted in the literature prior to the year of data collection (Bowles, 2004; Dailey-Hebert & Donnelli, 2010; Dark & Perrett, 2007; Holsapple & Lee-Post, 2006; JISC, 2004, 2007b). Interestingly, the pedagogically focused definitions by educator respondents mirrored more current definitions of e-

learning in that they suggested a broad pedagogical stance, and assumed ready availability of digital communications to support virtual communities of practice and online discussion regardless of time or place, as noted in the definition by Keengwe, Onchwari, & Agamba (2014).

7.2.2: Definitions of blended learning

Definitions of blended learning also proved predominantly process focused but less homogenous across the departments. Two approaches to blended learning existed, one approach used e-learning components to replace physically taught sessions, (predominantly seen in departments B and C) whilst the other approach utilised e-learning to complement classroom taught sessions (predominantly seen in departments A and D). Furthermore, as noted by Allen (2007) whether an educator or department considered the blend to be a physical classroom based course with e-learning enhancement (such as departments A and D), or an e-learning course with physical classroom or tutorial enhancement (such as one module team within department B), the conception influenced the level of guidance provided to students and the level of use of the module web spaces as simple information repositories, or more sophisticated information management hubs (Asgarkhani, 2004, 2012). For example, within department A, a physical classroom based approach to teaching was evident. This was supported by a large information repository uploaded to the module web space with minimal need for introduction and student guidance. This contrasted with department B's approach of attempting to create a primarily e-learning based module with classroom learning review sessions. This required the utilisation of an information repository on the module Moodle web space, with the further addition of guidance notes and instructions to support a move away from focusing on content provision to a focus on activity, as advocated by e-pedagogics such as Dalsgaard (2005), or what Salmon (2013) termed e-tivities

The differing conceptualising and defining of e-learning and blended learning across and within the departments under study resulted in differing experiences and perceptions of e-learning for both students and educators.

7.2.3: The relevance of differing definitions.

From the observations of undergraduate module web spaces and narrative analysed within data set three, there appeared to be two models of e-learning with differing pedagogical underpinnings in coexistence within departments A. B and C. There was a constructivist model of e-learning defined by a focus on technology mediated human collaboration, and/or computer based individual student interaction with on-screen learning activities. This model was then interspersed with and often structured within a less pedagogically driven information management definition of e-learning characterised by use of module information repositories and library data searching facilities. According to Chan and Robins (2006) this situation required students to work across two different learning paradigms and risked causing confusion, which appeared to be confirmed in the student narrative, particularly from department C students.

It appeared that educators from all four departments endorsed and aspired to a constructivist educational paradigm in differing ways and with differing levels of success. Module authors expended much time and effort in developing high quality online learning resources that were student focused and facilitative of engagement in professionally relevant and challenging activities with varying levels of interaction. For departments B and C, development of student-centred e-learning materials which enhanced learning through several constructivist characteristics, namely learning being reflective; activity based; and often utilising anchored instructional techniques (originally developed as early as 1990 by Bransford et al) stopped short of a constructivist central tenet of demonstration of learning within a social context via communicating within a virtual community of learning (Moule, 2007; Salmon, 2000, 2003). In this respect, the findings can be considered similar to a study by Moule, et al., (2011) whereby educator attempts at e-moderation appeared inconsistent and student learning via online communication proved minimal. When authoring e-learning materials, educators authoring the modules examined within this study often demonstrated adaptation of social constructivist views that meaningful learning is constructed through student engagement with peers and more knowledgeable others (Vygotsky, 1978), and alternatively structured e-pedagogy from a more individually based cognitive constructivist, and on occasion an instructional, approach focusing on

delivery of formal knowledge content (Piaget, 1973). From the quantitative results and focus group narratives, this approach was viewed as acceptable, and often preferable, by the student respondents, particularly in departments A and B, when discussing their preferred learning styles.

Within some departments, educator responses highlighted differing professional and pedagogical views and approaches to e-teaching. Educators generally reported a positive effect in facilitating development of varied and innovative examples of e-learning resources and online materials, plus attempts at online communicative learning noted by some educators within department B. The same variance in views however, also produced some confusion over the purpose of e-learning and differences of educator opinion. This seemed to produce a degree of conflict between educators, and sometimes between educators and students, as epitomised by statements such as:

> *and I was told, sort of like... afterwards, you know it's more than that, e-learning, it's using your whole module space to be able to guide students, you write a blurb sort of like, and I thought well we do that anyway, but it's more than... it's more than that, and I said oh ok, well I've never used it, but any more than that.*
>
> (Dept. A / Academic 2)

> *It's almost as if the effort you've put in isn't being recognised at all or there's no effort equal to that being put in from the other side.*
>
> (Dept. B/ Student Focus Group 1, St 2)

Within department D, constructivist e-learning approaches appeared more consistently applied. This was demonstrated in the form of greater student choice of how they engaged with e-learning materials developed primarily in support of classroom based education sessions, and in the joint educator and student use of social media resources such as Facebook groups and Twitter feeds. Within department D, the greater levels of educator uptake of the centrally delivered e-learning pedagogical development module coincided with the lowest levels of respondents reporting feeling confused as to the purpose of e-learning, and greater teaching faculty agreement on a departmental approach to e-learning as called for by Adams (2003), Alonso et al (2005), Asgarkhani (2004), Chan and Robbins (2006).

Following department D engagement in the educator e-pedagogy development module however, a conscious decision was made by the programme management team not to expect student collaborative group work to be mediated through the university VLE

discussion boards. As with department A, this decision was made for pragmatic reasons of meeting their primarily campus based student body expectation and preference for working in each other's physical presence, as noted by researchers such as Clayton et al. (2009) and JISC (2007b). This finding suggests that for department D respondents, departmental agreement on a definition and model of e-learning did not result in adoption of communication focused e-learning. A discussion on reasons contributing to this finding will be discussed later in this chapter when considering research question three.

In summary, the findings suggested that the teaching philosophies of educators and learning preferences of students influenced the defining of e-learning and blended learning in terms of information management (pedagogically neutral, data accessing and manipulating) or pedagogically based approaches such as online discussion of information, collaboration on establishing meaning of knowledge, and development of a virtual community of learning. These definitions then shaped the use of e-learning in terms of supporting or replacing traditional classroom based teaching.

The next section discusses the second research question of how the educators and students engaged in e-learning.

7.3: Educator and student engagement in e-learning

Data to answer research question two was captured through all three data sets within the case study which successfully achieved triangulation of key findings. Overall, in answer to the question of how educators and students engaged in e-learning, the data suggested that the student respondents were, as Saunders and Gale (2012) found, highly strategic learners who engaged primarily in those activities they considered essential to achieving module success. The educators in the study also selectively engaged in pedagogical approaches to e-learning which maintained control over what students learnt and aligned to the educational culture they identified most with.

Contrary to cautions by Asgarkhani (2012), Underwood (2007) and Hughes (2009) there appeared an explicit assumption by the case HEI that all students and educators would have access from home to a personal computer and broadband internet connection. The findings challenged the assumption of continual and immediate access

to information technology and digital communication, with over half of all educators reporting they had to compete for computer access at home. This challenge was particularly prevalent within department B, and also noted in students to varying degrees across all departments. The data revealed departments A and B students to be proportionately the most affected student respondents (n=6, 60%) for department A and (n=24, 44%) overall for department B respectively). Student respondent numbers were too small to draw any inferences from department A and B's wider programme entry gate and slightly older demographic as compared with department D, however the finding was in keeping with researchers who warn against assuming the digital divide no longer existed (Asgarkhani, 2012; Hughes, 2009; Underwood, 2007).

Where PCs were readily available for the majority of students, some respondents within the student focus group still reported not engaging with e-learning outside of normal campus open hours, for reasons of requiring the protected time to engage. This was noted by Lee and Chan (2007) and is illustrated in the statement below:

> *I put other priorities like I've got to work to pay me mortgage or got the cleaning to do, they* [e-learning exercises] *then come into it, you know what I mean?.. you don't mean to but if I know I am somewhere at a certain time, you know.. then you've made that time.. Your there...*
>
> (Dept. B / Student Focus Group 1, St 1)

The educators assumptions that healthcare students would prefer flexible learning hours to make use of evenings and weekends for study, appeared to ignore the realities of a group of students who were frequently working shifts in the evenings, and often engaged in additional paid employment to balance a household budget (as found by McVeigh, 2009; Moule et al. 2010; Williams et al. 2005). For some students, this was also in addition to managing a busy family life including dependent children. For some students therefore, traditional lecture based learning was preferable for the reason that the classroom periods were effectively protected time, as noted in the text above and time management code in Chapter 6.

Furthermore, as Sowan and Jenkins (2013) suggested, flexible use of e-learning requires that students plan ahead and set aside time outside of traditional university attendance hours, yet such time management skills are often acquired over the duration of an undergraduate programme and rarely exist from day one.

Despite the above challenges for some students, working flexibly was viewed positively by students provided it was under their control. It appeared that educator led exercises which made use of extra-curricular time periods needed to be justified in terms of educational or personal benefit. The findings showed that for full time students who did not see themselves as having signed up to a distance learning course, this was often not considered sufficiently justified to overcome challenges such as feelings of isolation and lack of peer/educator contact cautioned against by Childs et al (2010) and Dickey (2006). The majority of student respondents therefore expressed a preference to remain on campus and study under the guidance of their educator, than have the opportunity to work from home during standard campus opening hours. This was most strongly voiced within department B focus groups, following the department's attempt at a model of e-learning that substituted previously taught sessions, and the concern was least evident in department D students, where information management of materials to supplement taught sessions was the predominant model.

As seen in the previous section, e-learning was defined by educators using differing pedagogical models. This resulted in module web spaces being used in differing ways ranging from pedagogically neutral information management of data; through expecting student engagement in individually focused online exercises such as online quizzes, and, as found by Moule (2006) toward, but never fully reaching, more socially constructed knowledge development via an e-learning community of practice. Discussion board use proved minimal; but where used and assessed against Salmon's (2003) model of e-moderation, none of the web spaces developed beyond level 1 – Initial Engagement, with no students (or educator) asked to upload a photograph of themselves to 'humanise' the community (as advocated by Salmon (2003); Downes (2005), Keengwe et al. (2014). The majority of discussion boards did not therefore achieve online socialisation of the group nor meaningful student to student engagement. Neither was there evidence of the sharing of newly acquired or constructed new knowledge or resources which, as noted in the literature review, are aspects viewed as key success criteria for an online community of practice by authors such as Moule (2006); Palloff and Pratt (1999) and Shea and Bidjerano (2013).

Although a developed online community of learning was not evident, humanist and constructivist educational approaches (Null, 2004; Von Glaserfeld, 1995; Walat, 2013) were evident in all four departments in the form of interactive online exercises, such as scenario based reflections or data searches to inform case analysis (Kinsella, 2006, 2010; Schon, 1983; Bransford et al 1990). When assessed against Moule's (2007) e-learning ladder, level 1 – Information gathering and use of databases was consistently the most commonly seen feature in departments A, C, and D, with department B striving for a greater use of e-pedagogy moving their approach more often to Moule's level 2 – Interaction with learning media. Level 2 exercises were also noted in the first year module for department D due to a greater use of third party interactive learning media provided by the module author through the use of hyperlinks.

The findings from Chapters four and six confirmed educator and student respondents' preference for using elearning as a means of accessing learning materials, rather than learning through module discussion boards. This was in keeping with similar findings by Abdelaziz et al. (2011). Table 5.1 also showed 50% of the 12 modules examined in detail used the web space as information repositories, with the remaining 50% using module web spaces as a blended learning platform by virtue of a greater use of educator guidance and provision of feedback on interactive exercises as described by e-pedagogics such as Al-Huneidi and Schreurs (2012), Allen (2007), and Alonso et al. (2005). Case department engagement in e-learning was almost exclusively achieved through the university's VLE, with no module reviewed making use of mobile learning technology designed for smart phones (Q7j in data set one) which was confirmed by responses indicating that educators never personally searched the internet on a mobile, nor expected their students to do so when learning (Q7j, & Table 5.1) Additionally, only educators within department D alluded to, or encouraged the use of social media such as Facebook or Twitter as an alternative form of online communication to the module web space discussion boards. This finding was despite the widespread use of social media by students within the other departments for personal and educational purposes, as evidenced in the student narrative within data set three.

With the exception of one module in department B, the module web spaces examined were predominantly used as an adjunct to traditional classroom based teaching; however, department B also attempted to use e-learning as a substitute for previously

taught lessons. The module web spaces contained some engaging examples of robust e-learning, however the overall pedagogy appeared unclear, which as noted in studies by Adams (2003), Alonso et al (2005), Asgarkhani (2004), and Chan and Robbins (2006) could lead to tension and conflict. Conflicting views were found amongst the educator respondents from some undergraduate healthcare programme teams with regard to 'when and if independent e-learning should begin and what actually constituted e-learning. For example, periodic use of PowerPoint slides, which were sometimes previously used to structure a classroom based lecture, and later used as part of a replacement online reading and reflection exercise, proved a recurrent pedagogical conflict amongst department B educators, as evidenced by comments such as:

> *When you look at the quality of some of that work that is supposedly e-learning... it's a PowerPoint presentation for goodness' sake... How is that e-learning? That teaches me nothing.*
>
> (Dept. B, Academic 4)

Such differences of opinion provided one reason why certain aspects of engagement proved challenging for educators as well as students, and the next section will consider in more detail, further reasons why educators and students engaged in e-learning as they did.

7.4: Exploration of why participants engaged in e-learning as they did?

The university student cultural population proved predominantly white British, with the student questionnaire respondent ethnic demographic ranging from 93% white British in department C, to 100% white British in departments A and B. Educator respondents also proved predominantly white British. Considerations of adapting e-learning practice or wider pedagogy in order to meet differing cultural needs of students did not appear to be a focus in learning support documents or departmental meeting minutes, either at departmental or wider university level. This predominance of one culture appeared to produce 'Cultural hegemony' (Uzuner, 2009), where a large cultural bias of an organisation, might result in an educator's cultural view being unquestioningly considered the 'common sense' norm, and where students whose pedagogical values do not match are expected to adapt accordingly.

As noted in the literature review, the work of Hofstede, (1980, 1991) on cultural approaches to employment can be used to categorise the students and educators from the case departments as possessing low power-distance, more individualistic, slightly masculine and uncertainty avoiding characteristics, with students predicted to have a fairly short term time orientation to their studies. Tylee (2001) reflected Hofstede's cultural characteristics for differing national cultures and considered their acceptability against certain e-learning pedagogical practices. For example, she found Chinese students from a high power-distance cultural background, where acceptance of central control and viewing of an educator as superior in status was the norm, experienced discomfort and loss of faith in the educator and learning strategy when an online discovery learning exercise was facilitated through a low power-distance approach. The works of Hofstede and Tylee therefore suggest that the predominantly white British undergraduate healthcare students might expect and engage with a low power-distance educational culture and e-pedagogical approach by educators who facilitate an adult focused equal power relationship; however, the study results showed that this was not the case across all departments. Whereas department D's educator and student relationship and engagement tended to match the expectation for a more equal and facilitative relationship, departments such as A and B matched some, but not all the criteria. This was particularly evident regarding the possession of a high power-distance educator-student relationship articulate by some respondents, with example statements such as:

> *Erm… if you say to them* [meaning students] *there's the worksheet, there's the time, and I will be asking questions about that, in some detail, and I expect a lot, and you know if I don't get it from you I'll pick on you on the following Friday, and I know that if I do that, I know that they give it me.*
>
> (Dept. B / Academic 4)

This high power-distance relationship finding is suggestive of a cultural influence in the form of traditional healthcare professional practice education within the care sector. Education within this environment is often facilitated by clinicians who are not all fully integrated with HE pedagogical beliefs (Hall & Lynes, 2007) and themselves trained through an apprenticeship style, behaviourist led pedagogy (Hasson, McKenna, & Keeney, 2013). Due to the educator demographics, many of the case educators were likely first educated within such environments, within which the students from department A and B spent 50% of their programme hours.

The idea that other cultural influences affect the acceptability of education, beyond the broad national cultures focused upon by Hofstede, is in keeping with writers such as Branch (1997) and Uzuner (2009) who challenged Hofstede's ethnic and national view of culture, asserting culture to be far more multidimensional. For such writers, individuals belong to differing social groups and so are both cultural and multicultural at the same time, defining culture as:

> The patterns shaped by ethnicity, religion, socio-economic status, geography, profession, ideology, gender, and lifestyle
>
> (Branch, 1997, p.7).

According to the above definition, profession and professional environments are important considerations when considering culture. Professional culture might therefore be considered against Hofstede's original characteristics to structure further reflection on the educator and student narrative and the case study findings. Porcaro (2011) explored the idea that the views of students from developing countries may be culturally shaped by predominantly instructionist educational philosophies. Porcaro hypothesised that this may cause misalignment with a more developed nation's move toward constructivist pedagogy. Although not presenting such a wide philosophical and pedagogical divide, a similar situation appeared to be present within some of the case university departments in relation to differences of opinion between social constructivists who appeared aligned to the views of Vygotsky (1978). These educators articulated a higher academic culture interested in acquisition and construction of meaningful new knowledge through group communication. This group contrasted with cognitive constructivist educators who appeared to be also influenced by more behaviourist and cognitive educational approaches used within the professional education arena (Hall & Lynes, 2007) and who focused on formal and what Piaget (1973) termed procedural knowledge.

The five cultural dimensions identified by Hofstede (1980) of power-distance, collectivism versus individualism, feminine versus masculine, uncertainty avoidance and long term versus short term time orientation, will now be applied through the lens suggested by Tylee (2001) to structure an exploration of why educators and students engaged in e-learning as they did.

7.4.1: The power-distance dimension.

The findings highlighted that healthcare educator participants within departments A, B and C articulated a view of themselves as high power-distance professionals in relation to their students. These educators demonstrated high levels of control in their module e-learning practices, mandating both attendance in class and engagement in online directed study.

Educators from departments A and B appeared to resist releasing control of learning to students, and as noted by researchers Hung et al. (2003) feared not delivering content expected by professional validating bodies. The same reticence was noted to a lesser extent in department C, with department D appearing further removed from pressures of professionally prescribed content delivery and more open to student control of learning. The educator online pedagogy was therefore a reflection of, and was influenced by, wider cultural, philosophical and pedagogical decisions across the programmes. Previous professional healthcare education expectations have until recently linked blended online learning to attendance (HPC, 2009; NMC, 2010). Differing views on how mandated those hours were in a physical sense resulted in differing expectation of educators within department A and B, with some educators giving students additional e-learning or essay work to make up shortfalls in attendance hours, where others did not. This disparity in educator expectation seemed to cause confusion and resentment amongst many student respondents, who felt such educators ignored a student's ability to control their own learning and ensure a missed session outcome was achieved, as seen in the statement:

> *We can't miss it out because we could miss something really vital that you, you know, need in practice. So you're always going to catch up on the work. Whereas an essay is like overworking.*
>
> (Dept. A/ Student Focus Group, St 2)

Such feelings adversely affected student motivation to e-learn, student satisfaction, and the educator and student relationship. However, any educator expectation for student control of learning mainly extended to when and where learning took place, as opposed to the control of what was learnt. Student participants appeared to identify more comfortably with didactic lectures from professional experts who were seen to hold all the knowledge and transfer it to the student during the lesson. They valued being inspired by experts, over being engaged or stimulated by TEL.

According to Vygotsky (1978), it is the role of the constructivist educator to provide the context, pose the questions and provide the support to enable students to construct meaningful knowledge; importantly, the surrounding culture provides the student with the cognitive tools and required motivation to engage appropriately. Murphy (2006) opined the general acceptance of the view that close identification with clinical practice was essential for effective motivation of healthcare students. However, for the departments studied, the closer the educators identified with educational practice and educational paradigms prevalent within the health professions, the greater the challenge appeared for both those educators and some students to relate to the justification for student-controlled e-learning practices. The same was seen regarding reduced motivation to engage in e-learning utilising virtual communication via module discussion boards. Although a reduced motivation to engage in discussion board use was noted by Creedon and Cummins (2012) and Moule (1006) in relation to challenges of establishing trust across students, neither study considered the affect of the educator-student relationship. For department A educators, who identified closely and interacted frequently with practising healthcare professional peers, an attempt at substituing a series of previously didactic lectures with more student-centred, discursive learning via an online discussion board, resulted in strongly negative feedback from students and clinical colleagues. This resulted in reversion back to predominantly physical classroom based delivery, supported by periodic engagement with computer mediated individual exercises.

The high power-distance student/educator relationships prevalent within the hierarchical structures within UK healthcare practice education environments (Foster & Flanders, 2014; Murphy, 2006; Quinn & Hughes, 2013) appeared to conflict with the lower power/distance educator/student relationship aimed for by educators when advocating facilitation of student-centred learning within the university environment. Educators in practice expect explicit and enforced control of what and when students learn and how they practise whilst under supervision (Wakefield, 2000). For some students within department B, having adapted to education within a high power-distance, highly controlled and structured practice learning environment, the required switch to a more student-centred and facilitative, rather than directive educator/student relationship required of e-learning (Hughes and Daykin (2002), Moule (2007), Owens, (2012) Salmon (2000, 2003) appeared to create feelings of disassociation with

educators in some students. On finding themselves in the unfamiliar role of being central to their own learning and adrift from highly supervisor controlled processes of a practice educator, students appeared to resent the loss of expected structure and ascribed the blended learning strategy and constructivist ethos, as one of being neglected or poorly supported. Furthermore, negative student feedback from a misalignment of expectation also left some educators feeling disheartened and vulnerable to criticism when teaching innovations were rejected by students.

As noted within findings under the code of *Relationship*, such tensions regarding the power relationship between educators and students highlighted by the use of pedagogically driven e-learning, were further complicated by the perception of educators as gatekeepers to a profession. Particularly in departments A and B, educators saw themselves firmly in this role, and charged with ensuring not only professional knowledge and clinical competence, but also professionalisation and confirmation of a graduate's professional character and adopted standard of behaviour. This role further widened an unequal power balance in favour of the educator. Without the clarification of ground rules and expectations (Singh and Hardaker &, 2014), and the use of online socialising exercises advocated by e-learning pedagogics such as Salmon (2003), Gregory and Salmon (2013), and Moule et al. (2010) to build trust, the contradiction between the role of professional gatekeeper and role as academic online facilitator further prevented open use of module discussion boards. Furthermore, use of social media was seen by some department B academics as professionally risky with concerns that students may fall foul of being found professionally unsuitable if an inappropriate comment is posted on social media such as Twitter or Facebook. This was a fact not lost on their students, and typified by:

> *I don't like to think they are watching the discussion boards, which I know they are,*
>
> (Dept. B. Student Focus Group 3, St 4)

As a result, department B educators appeared likely to be excluded from their students' social media group discussions, which was not the case for department D. Within department D a lower power-distance relationship (Hofstede, 1980, 1991) existed where educators did not function as professional gatekeepers. Although some department D educators expressed concern when students took control of their learning

and used the online resources to opt out rather than attend a lecture, others voiced the view that their students were adults who owned their own degree and were able to make their own choices. Overall, the educator participants presented a less authoritarian narrative than educators from departments A, B, and C, and a more facilitative ethos required of a constructivist pedagogical approach to e-learning (Keengwe et al., 2014; Salmon, 2003; Tobias & Duffy, 2009). Due to the structure of their programme, department D students were not exposed to a high power-distance practice culture during their studies, and appeared more relaxed at the prospect of taking control of their own learning. They viewed themselves more as education consumers, and (despite some reservations from their educators) the focus group respondents felt abler to choose how and when they learnt, including whether to attend lectures, than students in the other three departments.

Educator and student conceptualisation of student choice was interwoven with ideas of students not only controlling their learning, but also acting as consumers of a service provided by their educators (HEFCE, 2005; MacDonald & Thompson, 2005). Once considered as consumers, students were also viewed by department D educators as requiring justification for use of e-learning:

> *Well I suppose they want to see e-learning justified. The class is the standard, the default, and if you deviate from it then the onus is to prove why it's better, I suppose?*
>
> (Dept. D / Academic 2)

Some students from across the departments felt justified as consumers in choosing which educational services they wished to engage with and felt justified in robustly feeding back to educators on the quality of their e-learning experience if expectations of teaching service were not met. During the interviews, although some educators agreed with this viewpoint, justifying non-use of e-learning in terms of student preferences, others (particularly within department B) challenged the view that what was enjoyed or preferred by students was not necessarily the best strategy for student learning and professionalisation.

The student consumerist perspective appeared to further raise tensions within an educator/student relationship already spanning two educational cultures when

engaging in e-learning. The Web space review and student narrative highlighted that department B online non-classroom attendance components of the blended learning format appeared at times to be based less on pedagogical decisions and more on responding to shortfalls in classroom availability. Although this was seen as an expedient use of e-learning and efficient use of resources by some educators, students became aware of the underlying reason for the often short notice changes, with some expressing feelings of dissatisfaction as consumers with their educator commitment to their programme. Conversely, rising student expectations that lecturing staff will be available online as flexibly as their students, as reported by Janes (2006), was not a feature of student narrative or the Q10 attitude survey within data set one.

7.4.2: The collectivism verses individualism dimension

Hofstede (1980) developed the collectivism versus individualism characteristics based on the extent to which an individual is raised in a family group that provides protection in return for loyalty. Hofstede considers white British culture to be individualistic in that family ties are loose, and individuals are predominantly expected to look after themselves and immediate, rather than extended families. An individualist culture values truth over a group's stability and internal relationships, which can be considered a core requirement of a practising health professional's code of conduct and a requirement for candour (CQC 2015; HCPC 2009; NMC 2010).

Hofstede also categorised individualist cultures as being less inclined to work collaboratively, which appeared to be seen in departments A and C student focus group discussions. However, again department D students articulated the opposite view. Although inconsistently seen, individualistic cultural characteristics were further demonstrated in student and educator participant preference for e-learning functionality benefits such as instantaneous access to information and data search capabilities, as opposed to online collaboration tools and opportunities to develop communities of learning, which is in keeping with findings noted by JISC (2007a & b), Kiteley and Ormrod (2009), and Qiu, Hewitt, and Brett (2012).

Educators across all four departments raised the issue of personal computer use presenting a barrier to students debating complex ideas as this required sophisticated

writing skills that some students had yet to develop. Discussion on the potential benefit of online discussion allowing less confident students to express themselves (JISC, 2004) led to several educators expressing a belief that such inhibited healthcare students required support to develop more extrovert and confident communication skills which could only be provided through contact in a physical classroom setting. Such reasoning for preferring physical over virtual educator/student contact was further exacerbated within departments B and C educators by a belief in their responsibility to ensure the development of a student's professional persona by the end of the programme. For several educator respondents, virtual contact was viewed as insufficient to achieve such professionalisation and make a corresponding assessment of character.

The findings showed that a significant number of student respondents and some educators felt uncomfortable writing to a discussion board. Sowan and Jenkins (2013) also noted student antipathy for collaborative working, with students preferring individual effort and assessment. The Sowan and Jenkins finding matched department A student responders who openly stated they did not enjoy working in groups to develop presentations and feedback to peers, whether in class or online, preferring individual effort to achieve learning tasks and assessments in line with an individual cognitive or sometimes an instructionist learning approach.

Department B students responded that they enjoyed classroom based group work, yet justified not engaging online due to virtual collaborative exercises perhaps not recognising that students have differing social circles, ranging from cohort acquaintances, with whom it was acceptable to ask superficial factual questions about such things as timetable changes online, to closer friendship groups where students felt it more acceptable to discuss personal opinions or express concerns about personal knowledge gaps, as indicated by:

> *Yeah well, it's not like they're your own group, they're strangers, and you're not gonna open up and just talk to someone you've never met about something you're not sure of… it's so false… and if someone doesn't start it, then you're not gonna start it…*
>
> (Dept. B/ Student Focus Group 3 St 2)

The above narrative and finding have resonance with the views of Qiu et al. (2012) who advocated splitting large online classes into groups of no more than 12 to 15

students. Since these differing group dynamic were unconsidered by department B educators when allocating groups and attempting to facilitate online collaboration, and in the absence of socialising exercises advocated by e-pedagogics such as Salmon (2003) and Moule (2007) students appeared to opt out of engagement for fear of transgressing their implicit online social norms. This may have been another reason why so few students appeared to collaborate freely online using the module web space discussion boards, even within an innovative multidisciplinary module designed to facilitate sharing of ideas across differing healthcare professions. Students alluded to disengaging from the online module due to not wishing to expose their more personal views to strangers, opting instead to discuss issues with closer friendship groups via social media, which for groups A, B and C, meant educators were not privy to such discussions. Although some department D educators were invited into unofficial social media groups, a department D educator responded he felt it required a differing and more advanced communication skill set to that required for collaborating when physically present, so relied on class base collaboration first to develop initial collaborative skills:

> *No, learning to collaborate and debate at an appropriate level is hard enough in the classroom, and requires a whole different skill set when you introduce an online medium to boot.*
>
> (Dept. D / Academic 3)

Therefore, due to the individualistic nature of the students, and the preference for information management over communicative learning, the findings showed that online communities of learning did not exist within the module web space discussion boards. However, as noted earlier, informal student communities of learning did exist to a degree outside of the university VLE on student social media group sites. Departments A, B and C educators were however, excluded from such groups by virtue of adopting the professional gatekeeper role, whereas department D educators, who were less inclined to use such discussion forums as part of their teaching strategies, were seen more trusted facilitators by their students and often invited to view such online groups.

7.4.3: Feminine versus masculine

During the literature review, discomfort in cooperative learning mediated through technology was noted by researchers in relation to healthcare students, particularly

males (George & Dellasega, 2011; Jackson et al (2001); whilst Caspi et al. (2008) found female students to be more at ease using discussion boards to communicate during discussions than their male counterparts who talked more often in class. Neither gender, however, found virtual communication preferable to physical interactions.

Given the study findings above, the current study finding of low engagement in online communication is perhaps surprising given the high numbers of female students and importance of inter-professional collaboration within healthcare practice (Coster et al., 2008; Williams & Lakhani, 2010). Tylee (2001) associated such online collaborative discomfort less with gender and more as a characteristic of Hofstede's third cultural dimension of Feminine versus masculine. Hofstede viewed white British culture as slightly masculine in its maintenance of a loose gender distinction of feminine orientation to home, children and caring, as opposed to masculine roles of assertiveness and competition; which Tylee associated with the male preference for information gathering over communicating. Traditionally, healthcare practice environments have valued the feminine caring attribute and masculine need for control, so might also be considered a masculine culture (Greener, 2007). Such gender distinctions are lessened in current UK society however, and although the department educators' consistent requirement to remain in control of the student online learning experience might be considered in keeping with a masculine healthcare culture, this author considers the findings from the current study's predominantly female student and educator respondents to contradict expectations of a white British feminine versus masculine dimension, which would expect the mainly female respondents to be more open to communication and collaboration. Therefore, other factors such as a preference for physical over virtual interaction are possible alternative influences.

Allan and Lawless (2003), however, found a similar dislike by predominantly female students when required to collaborate online within a business school programme. By means of a mixed methods case study, Allan and Lawless cautiously concluded that on-line collaboration caused stress, particularly to the female participants, and that the stress was linked to collaborators feeling dependent on each other within a competitive environment without sufficient levels of mutual trust and commitment (Allan & Lawless, 2003, 2005). When considering the student focus group narratives regarding preference for collaboration with friendship groups over educator created groups, such

feelings of student stress identified by Allan and Lawless may have further contributed to low discussion board engagement, along with other findings from the current study such as a perceived lack of justification to engage in online discussion with a primarily campus based student population (particularly strongly voiced in department D) and a prior expectation for physical classroom attendance and discussion, as noted by respondents from department B, for example:

> *I came to university though, because I wanted to come to university, so if I wanted to do e-learning I would have gone to like the Open University and do it online if I wanted to work that way, but I want to come to the classroom, I want to come back to schooling and meet other students.*
>
> (Dept. B / Student Focus Group 3, St 6)

7.4.4: Uncertainty avoidance

It is within Hofstede's domain of uncertainty avoidance that healthcare practice culture and higher education culture espousing a constructivist alignment appeared to differ most. In relation to the findings, healthcare practice can be considered to be a high uncertainty avoidance culture, whereby student behaviour and learning are controlled by formal rules, and where qualified professionals are required to make a long term career commitment (Lai, 2006). Hofstede asserts that high uncertainty avoidance cultures also expect structure in organisations, working practices and relationships to ensure events are readily understood and predictable. This can certainly be seen within the National Health Service, with an expectation for strict adherence to protocols and policies, and where practice educators are traditionally viewed as experts who know all the answers. It is within this culture that an undergraduate healthcare student may become accustomed to more directive teaching styles.

In contrast the opportunity for students to engage with uncertainty and wrestle with unclear concepts as openly encouraged and celebrated by constructivism within higher education (Cunliffe, 2008; Keengwe et al., 2014; Von Glaserfeld, 1995), coupled with the preference for 'messy' problem based learning approaches (Hung et al. 2003) appeared not to be reflected in the web space teaching materials authored by the majority of educator respondents. Furthermore, educator narrative often referred to relying on didactic or demonstration teaching strategies when covering clinical procedures perceived as professionally important, as noted within the educational philosophy code.

Students from departments A and B also disliked the lack of didactic structure required of constructivist online pedagogy, and so avoided engagement in the less directed online exercises. Furthermore, the lack of conformity in presentation and pedagogy style as noted within departments B and C web spaces has been shown to reduce satisfaction and cost students valuable thinking time and mental energy better spent focusing on the learning materials (Downes, 2005).

Also notable was that student focus group participants appeared to have joined the case university with expectations of a predominantly physical and didactic classroom based experience as noted by JISC (2004, 2007b) and did not understand the pedagogical aims and reasons underpinning social constructivist e-learning. As a result, educator-controlled online directed study exercises appeared better engaged with, as evidenced during the module reviews and qualitative discussions, while the more student-centred and student-controlled constructivist based exercises, which often included attempts at asynchronous discussion board debate, proved less successful. For the same reasons, students, who expressed a preference for having content delivered to them in the form of an educator controlled lecture dislike being faced with an information repository when the materials replaced a previously taught session, yet welcomed the same information if used as directed pre-or post-taught session supplemental reading.

As a result students appeared to stop engaging when frustrated by a perceived lack of guidance or feedback on e-learning work submitted for review, with department C students voicing frustration at not knowing what was expected to be submitted and what was not, as evidenced by comments such as:

> *You do this work and then it's 'What do I do with it now?' and apparently it's nothing! It's done! And other lecturers were expecting a response, so sometimes you're not quite sure if you should have sent work in or…. (Shrugs)*
>
> (Dept. C/ Student Focus Group, St 3)

7.4.5: Long term versus short term time orientation

The student respondents displayed a short term time orientation in keeping with Hofstede's expectations for a white British society, whereby student focus was often directed on the immediate past and future as opposed to longer term goals. Student

motivation to engage in e-learning appeared linked to achievement of the current module assessment results, rather than overall programme learning objectives or future professional career requirements, as noted within the motivation code by comments such as:

> *I'm trying to motivate students with the 'you will need to know this to be a* [names professional group] *with first years and they've got three years to go, so it doesn't always motivate you does it!.*
>
> (Dept. B / Academic 2)

And:

> *It's just not important yet, I view it as being not important which is wrong however I'm aware that it's wrong but it's not marked.*
>
> (Dept. B / Student Focus Group 2, St 2)

As found by JISC (2007b), students showed themselves to be very discerning of e-learning offered, and selectively engaged in e-learning activities they considered to be most justified in terms of contributing firstly to immediate module success, and secondly to overall programme goals, prioritising what they perceive as high value engagement over less justified activities.

The finding of student's short term focus on module assessment was in keeping with findings from Schank (2002) who advocated educators must remain aware of this characteristic. E-pedagogics such as Clayton et al. (2009), Hoskins and Van Hooff (2005) and Keengwe et al. (2014) agree and suggest explicitly challenging and refuting the tendency, or explicitly discussing and actively weaving exercises which provide graded instant feedback quizzes into students' online resources. Interestingly, the use of formative quiz-like questions was part of the instructional design of all three department B module web space reviews, however, the questions were produced as a Microsoft Word document, and as such the full VLE capability of providing instant feedback was not utilised. This approach appeared not to satisfy the students' expectations of timely feedback and provision of a mark, lowering both satisfaction and motivation to engage. As noted by Sweeney et al. (2004) and Alias and Rahman (2005), email tutorials were, however, commented on by department A students as being useful for reasons of speed of response and the availability of a written record of feedback that could be referred to later. Yet, due to the structuring of the blended

learning experience within department B, feedback on student e-learning exercises often consisted of periodic plenary classroom sessions which briefly reviewed who had undertaken the work and a general check on group understanding. Many student respondents within departments A, B and C felt they should receive more frequent and individually graded feedback on e-learning exercises, whilst some educator respondents felt periods of feedback and physical contact with students to be too infrequent. This misalignment in feedback expectation further resulted in feelings of student and educator frustration and a reduced inclination to engage with the next online exercise.

Without a clear understanding, acceptance and adoption of the underpinning constructionist educational philosophy and clear explanation of e-learning's role in achieving the overall programme aims, some students and educators appeared to miss the longer term pedagogical point of blended learning and selectively engage and prioritised what they saw as most beneficial to short term module success, as noted by Clayton et al (2009) and Schank (2002). Additionally, some students voiced later regretting not engaging more in earlier e-learning exercises, when the same knowledge was further built upon in a subsequent year or as qualification became more imminent.

Personal time orientation therefore had an effect on student time management practices as noted by Pagana, (1994) and Xu, Du, & Fan (2013) as did perceptions of being able to control one's own time management, in accordance with findings by Macan, Shahani, Dipboye, & Phillips (1990) and Mirzaei, Oskouie, & Rafii (2012). Whilst some educators from departments B and C articulated a belief that student time management would be more effective if working from home, student respondents from the same departments contradicted this assumption during the focus groups, stating time management often proved more difficult due to other calls on their time from domestic and external work pressures. Other educators expressed concern that students used timetabled e-learning activity time to do other things such as part time employment, and then did not engage in the materials at a later date. This was confirmed by the student focus group narrative.

Educators saw the year-long structure of their academic year as a problem in not allowing time for updating of the material, and a problem not recognised by the rest of the university who follow a shorter academic calendar. Insufficient time was also a

commonly cited reason why department C educators did not engage in discussion board use. However Porcaro (2011) suggested that in the presence of conflicting educational philosophies, such references to insufficient time to develop competence or author e-materials are in reality a result of an educator not choosing to allocate the time, rather than the time not being available.

In the same light, it might be argued that the current study finding which showed low levels of staff engagement in the university wide, centrally funded and developed TEL module did not necessarily result from a lack of time, but from a lack of educator motivation to make time. When the underpinning social constructivist educational philosophy seemed not to align sufficiently with more individualistic cognitive constructivist philosophies noted within the departments identifying closely with professional healthcare pedagogies, the result appeared to be high levels of philosophical conflict, rather than congruence and a desire to adapt and embrace both pedagogical approaches and wider learning cultures.

To illustrate this point, Figure 72 presents a model of the influences affecting educator and student decisions based on the findings from the current study. The model is adapted from Porcaro's (2011) work on adoption of innovations within differing national cultures and incorporates the following elements:

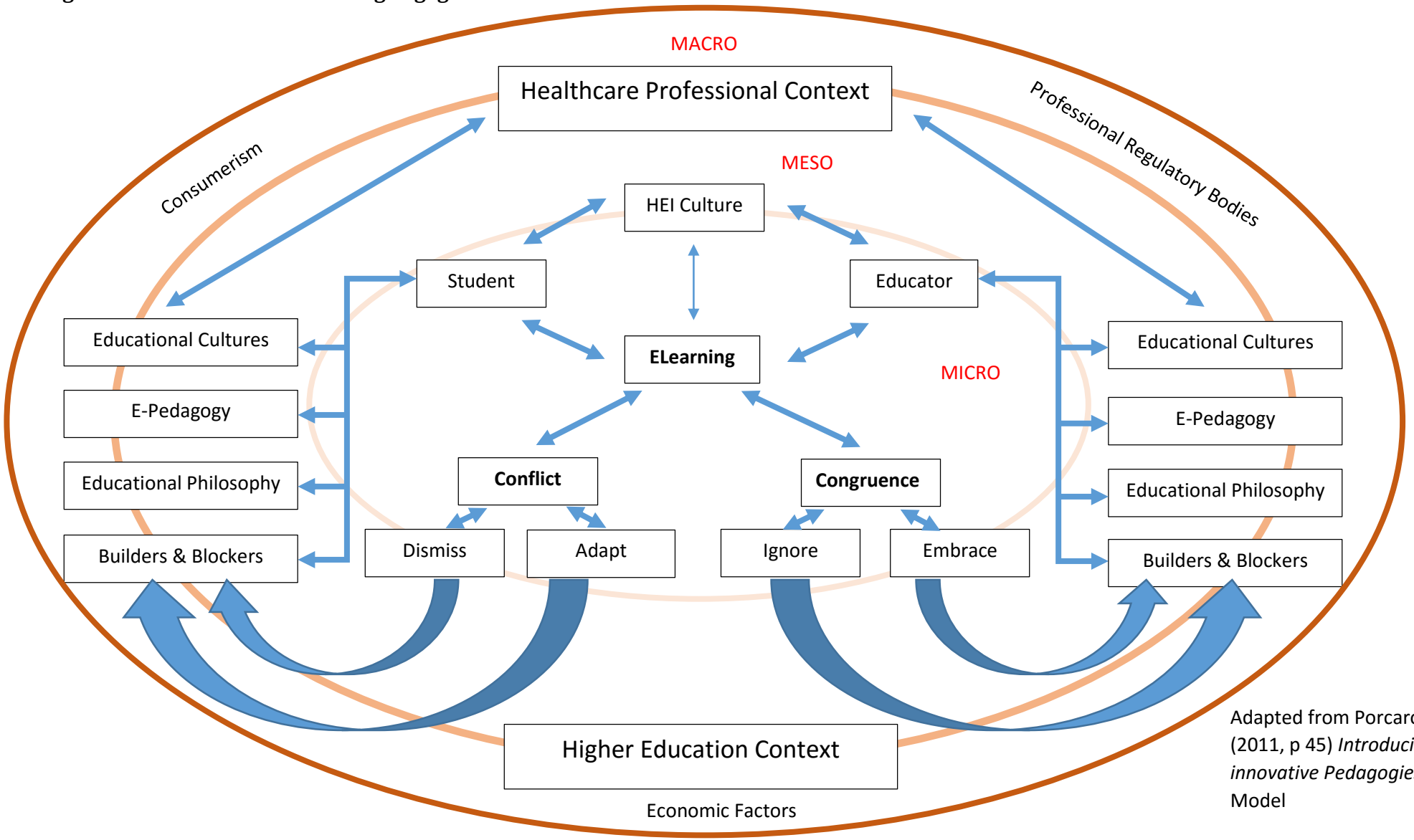
- Macro factors such as economic considerations, consumerism, and professional body regulations which span both the academic and healthcare professional contexts.
- Meso institutional factors such as organisational cultures, educational philosophies, resulting e-pedagogies, and facilitating and inhibiting infrastructure affecting educator and student choices.
- Micro factors such as pedagogical beliefs, learning styles and personal attitudes, which affect individual disposition to dismiss or adapt educational and learning practices as a result of the differing influences.

Within the model, the central issue of elearning is both influenced by, and influences the attitudes, perceptions and behaviours, of students and educators. Students and educators are themselves further influenced by differing meso level departmental

cultures plus wider educational cultures spanning both departments and placement provider organisations. These cultural influences then intersect with the macro and meso factors identified producing differing levels of educational alignment to the aims and processes of elearning for both students and educators. The differently viewed levels of alignment then produce either conflict or congruence as students and educators dismiss, adapt, ignore or embrace the two differing models of e-learning identified within the case departments.

This chapter has discussed reasons for how and why undergraduate healthcare educators and students engaged in e-learning within the case university as they did. Paramount amongst the reasons appeared to be differing academic and healthcare professional educational philosophies which challenged social constructionist requirements for student-controlled learning practices. In considering the use of e-learning, educators demonstrated an ability to reflect on their own strategies for teaching and learning. Educators adapted their constructivist compatible philosophical beliefs and applied a cognitive constructivist pedagogy which did not require the use of asynchronous discussion boards. This appeared to be evolutionary rather than revolutionary, with e-pedagogy needing to re-align with physical classroom based constructivist educational practices.

Figure 72: Influences on e-learning engagement model



Adapted from Porcaro's (2011, p 45) *Introducing innovative Pedagogies* Model

7.5: Summary of Conclusions

The study was successful in exploring student perspectives and experiences of e-learning within undergraduate healthcare education using a mixed methods case study. The study has uncovered new knowledge and contributed to the debate on the use of e-learning in undergraduate higher education. The main findings from the case study were as follows:

- As highlighted by the educator and student questionnaires and the thematic analysis in Chapter 6, two definitions of e-learning coexisted within the departments under study. There existed a constructivist model of e-learning interspersed with a pedagogically neutral information management definition of e-learning characterised by individual use of module information repositories and library data searching facilities.
- Data from the phase one questionnaire and phase three educator semi structured interviews and student focus groups triangulated well and identified that participants held predominantly positive attitudes and views toward e-learning as a means of providing instant access to learning materials and information sources, but mixed views on e-learning when used as a pedagogical substitute for classroom based education.
- The same data collection phases showed mixed levels of educator self-reporting of e-competence, both in technical ability to author e-learning materials, and pedagogical awareness.
- Throughout the data, a supportive educational culture appeared an important factor for educators in shaping underpinning educational philosophy and e-pedagogy; whilst the same cultural exposure was important in shaping student expectation, acceptance, and ultimately engagement in student-controlled e-learning.
- Findings from theme three suggested a strategic consideration of stakeholder educational philosophy and culture is required to ensure any proposed e-learning model fits with educator and student expectations and previous experiences.
- Some academics aligned to a healthcare practice culture maintained educator control of e-learning and practised within a cognitive constructionist educational paradigm.

- When considering the differences in educational culture displayed by departments within Chapter 7, academics less aligned to a professional practice educational culture appeared slightly more at ease with allowing student control of e-learning.
- The use of asynchronous discussion boards as a means of facilitating students to collaborate and socially construct meaningful knowledge was rejected by department D as unjustified and overly complex for their predominantly campus based undergraduate students. A blended learning approach utilising the module web spaces as information repositories to support classroom teaching was therefore adopted.
- Although successful and innovative examples of individually focused, educator controlled cognitive constructivist online activities were seen within the other three departments, the use of more socially based online group learning proved minimal and poorly engaged with by students when attempted.
- Although no evidence of the successful development of discursive communities of learning was seen within module web spaces, or highlighted within the questionnaire results or phase three narratives, students from all four departments made reference to informal communities of learning on social media sites.
- Thematic analysis of the Affective category within Theme 3, suggested engagement in e-learning raised tensions within the educator and student relationship with regard to issues such as previous expectations of teaching and consumerist views of higher education.
- How the participant healthcare students felt about e-learning and their educators was as important an influence on their rationale for use as was the instructional design adopted, or learning materials provided.
- Particular challenges of gaining student trust and willingness to share opinions online were highlighted for healthcare educators who saw themselves both as academics and gatekeepers to a profession. These same educators appeared excluded from being invited into student social media groups, where other educators were not.
- The current study showed that e-learning promotion strategies and pedagogical practices need to reflect the realities of teaching in a healthcare education context. E-learning should be used judiciously to enhance, not replace more traditional, yet still highly valued forms of education.

Each of the findings and new knowledge uncovered were used to construct an undergraduate healthcare e-learning development model contained within the next chapter.

Chapter 8: Recommendations

As the use of technology grows within healthcare practice, so must its use in healthcare education (Singh and Hardaker 2014). With the advent of the consumerist student, satisfaction surveys, and university league tables, educators cannot afford students to become dissatisfied with their programme through a misunderstanding of the pedagogical reasons behind e-learning or potential benefits of TEL. The following recommendations are suggested and followed by a developmental model with regard to application:

- A common definition of e-learning and its differing underpinning educational philosophies should be explicitly sought by programme leaders prior to designing a blended learning experience. This would facilitate clearer pedagogical agreement and ensure consistency and effectiveness of the student learning experience.

- Rather than focus on technical authoring, when supporting educator professional development within e-learning, HEIs should also address the particular educational beliefs and pedagogical learning needs of academics. This will facilitate underpinning educational philosophies and alignment with educator and student expectations, and allow educators to maximise student understanding and engagement in agreed e-pedagogies.

- To maintain positive student attitudes to e-learning, healthcare educators and students should be encouraged to jointly decide on the underpinning pedagogy and supporting e-activities used when engaging in e-learning. This should take account of student learning preferences and choice of TEL use, and include explicit discussion on the use of module asynchronous discussion boards and social media forums to build a trusting educational relationship.

- Regardless of pressures for expedient use of resources, educators should ensure use of technology does not undermine established and robust educational practices to prevent increasingly consumerist students from becoming critical of provision quality.

- Educators engaged in undergraduate healthcare programmes need to work across higher education and healthcare practice environments, and use the benefits of e-learning as a means of engaging with practice educator partners to develop mutual understanding of each other's needs, educational cultures, and adopted pedagogies. Such understanding will prevent students being exposed to conflicting teaching philosophies and strategies which undermine student confidence in the relevance of constructivist e-learning.

- Student and educator narratives highlighted the difference between external motivation to engage in e-learning provided by educators and possession of sufficient self-disciple by students to complete the work expected of them. Both issues need to be addressed through careful curriculum design if successful e-learning engagement is to be maintained.

To support the above recommendations and facilitate educator and student choice in the form of e-learning they might jointly adopt, the following undergraduate healthcare e-learning development model is proposed.

8.1: The two towers healthcare e-learning model

In an attempt to build on the positive aspects noted across department e-learning practice and overcome identified challenges faced by the healthcare educator and student respondents, the author is advocating a model of e-learning pedagogical development (Figure 73). The model acknowledges the differing educational philosophies and cultures spanned by healthcare educators and students. A framework of e-learning practice promotes choice in the approach adopted depending on educator and student preferences. This allows for creative linking of differing pedagogical methods as advocated by Vavrus (2009) who noticed teachers in Tanzania applying

both constructivist and instructivist methods when meeting the diverse needs of culturally mixed schools catering for both western and Tanzanian students. In the same ethos, this author is advocating meeting the needs of healthcare students and educators required to move between the social constructivist higher education arena, and the often behaviourist and cognitivist world of healthcare professional education practice (Gidman 2011).

The model is based on pragmatism, rather than dictated by a single ideological educational philosophy. It facilitates choice in deciding how e-learning is defined and structured through the use of differing VLE functionality. The model aims to strengthen the adaptive link noticed between educational theory and practice within the case departments, and address the observed imbalance between guiding constructivist philosophy, cognitive e-pedagogy and underutilisation of available learning technology. The model also facilitates the adoption of constructionist e-moderation whilst remaining cognisant of the healthcare professionalisation agenda and educator/student relationship. Although not generalisable to a wider HEI arena, the model may provide useful discussion points for educators within a similar situation.

The model is presented as two distinct e-learning pedagogical towers which can only be traversed if moving from social constructive to cognitive constructive practices. This allows for social constructivists to make use of benefits presented by the alternative cognitive approach; however, moving from cognitive to social constructivist teaching strategies requires that time is taken to complete the initial group socialisation exercises to support student engagement exercises. The model requires the building of a solid foundation before specific pedagogical decisions on the use of various technologies and whether to pursue the development of an online community of learning or an individual cognitive constructivist model of e-learning are made.

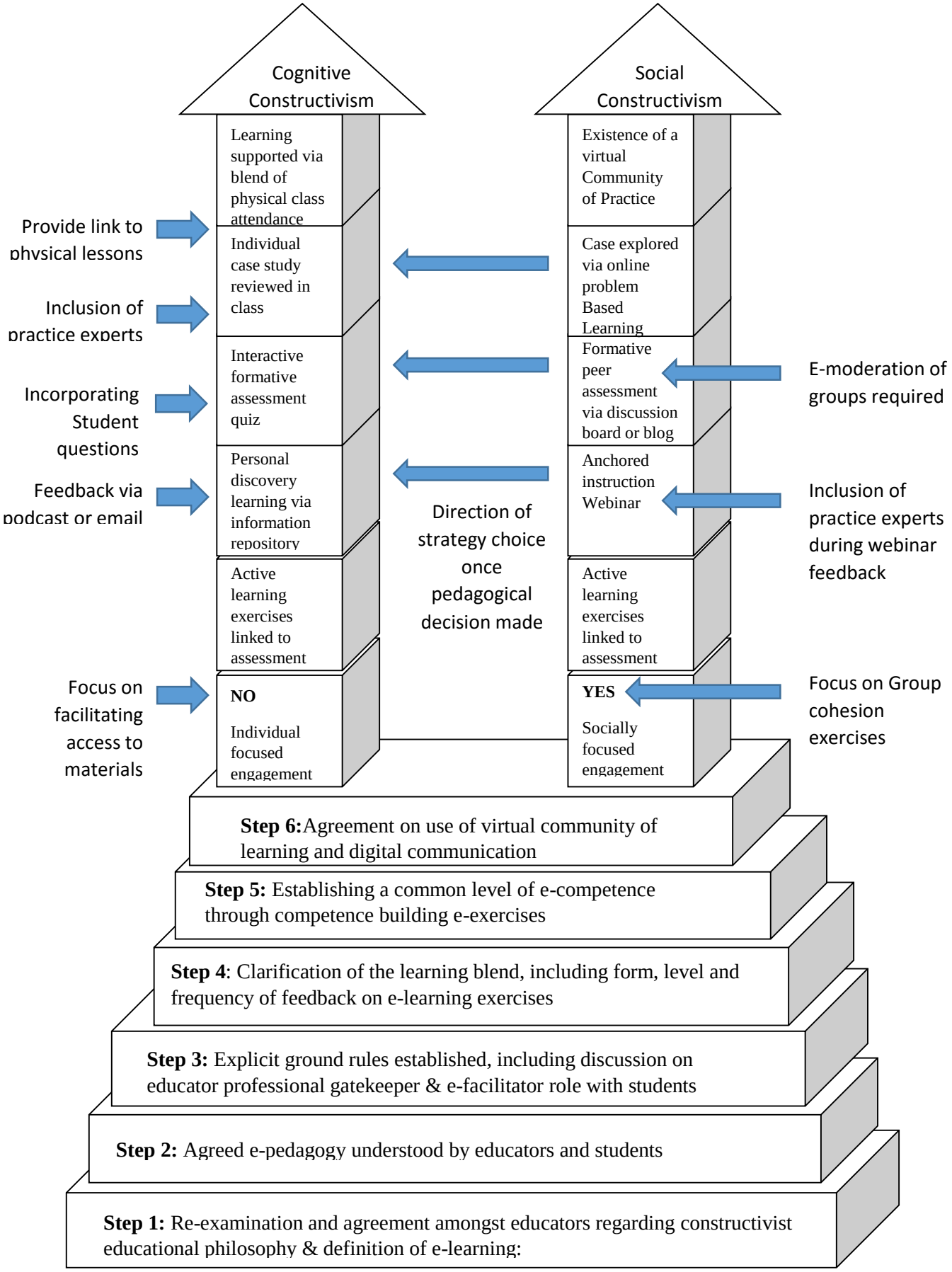


Figure 73: The two towers healthcare e-learning model

The two towers healthcare e-learning model

The foundational base of the towers is presented as sequential preparatory steps, each of which is taken toward a decision on whether to adopt a social constructivist or cognitive constructivist pedagogy.

Step One: Educators should review the delivery team and wider faculty understanding of e-learning and their underpinning educational philosophies. Consideration should be given to the justification, relevance and contribution of e-learning to both the module and overall programme learning outcomes.

Step Two: Educators should ensure they and their students share a common understanding of the definition and underlying educational philosophy that constitutes their view of e-learning and blended learning. This should include expected and permitted levels of educator and student control of e-learning. Educators may wish to incorporate a brief video or audio presentation of this common understanding for inclusion on the homepage of all module web spaces, as advocated by Salmon (2013).

Step Three: The role of educators as gatekeepers to the profession and assessors of professional character should be discussed explicitly with students, and ground rules for online communication, use of social media and use of technology within practice established clearly from the start. The dialogue should aim to promote a safe and supportive environment to foster open virtual discussion if used.

Step Four: During confirmation of what constitutes blended learning, expectations of the amount and frequency of all feedback should be negotiated and agreed.

Step Five: Before e-learning commences, educators need to confirm student access to, and experience with varying levels of technology, such as personal computers, digital cameras, mobile phones, and online video; and with differing digital academic competencies such as web searching, and uploading or downloading podcasts and other digital materials. The greater access to technology and more e-competence the student group has, the more options are available for developing engaging exercises with the learners.

In light of the student cohort ability to use TEL functionality, differing information technology exercises such as accessing and searching a data repository, uploading or downloading online content, or writing to a blog can be used to bring the entire cohort up to a minimum required competency level.

Step Six: Only once the above foundation has been established, should the educators and students decide if digitally mediated communication when collaboratively learning is desirable for the cohort. If so, a focus on virtual community building exercises such as development and sharing of an audio/video student profile (podcast) should be instigated, along with composition of discussion subgroups which take account of existing friendship groups.

Webinars or tele/video-conference calls might be preferable alternatives to discussion boards, as it is the underlying collaboration that is the goal, not the use of specific technology. Educators will, however, require sufficient development to be able to effectively e-moderate such forums.

Designing learning exercises that involve collaboration which spans both the VLE and physical classroom on subjects of future professional interests, will improve students' online social presence and augment the blended learning approach (Strong et al, 2012). Linking exercises firmly to formative or summative module assessment which contribute to the learning outcomes (as suggested by Clayton et al. (2009), Hoskins and Van Hooff (2005) and Keengwe et al. (2014)) maintains student motivation to continually engage.

As students and educator choose to progress up either the social or individual constructivist pedagogical towers, active learning is established with authentic exercises exposing students to primary sources of information situated within a relevant context and encouraging students to look for relationships which build a more complex understanding (Herrington & Oliver, 2000). This might use anchored instruction scenarios, supported with a range of supportive learning materials and references to encourage independent searching of deeper information (Bransford et al 1990); or case studies, presented and discussed either virtually or within a physical

classroom with clinical experts. As the student and educator progress toward the top of the tower, technological competence requirements increase, as does the need for the 'blend 'of learning to include frequent engagement in a clearly valid online or class based assessment related activity. Maintaining relevance to formative or summative assessment of module outcomes will further maintain student motivation and focus on learning engagement.

8.2: Further recommendations and reflections on the study

The mixed methods case study achieved the aims of uncovering the perspectives and experiences of educator and student respondents at a sufficiently deep level to provide new insight into how healthcare educational culture impacts on e-learning within the context of an HEI. The original contribution of the study is a deeper understanding of the complex cultural and relationship issues highlighted by the use of elearning within undergraduate healthcare preparatory education.

From an original interest in the changing face of healthcare preparatory education and the part TEL might play, undertaking the PhD has brought about greater personal understanding within two key areas for this academic. The first area relates unsurprisingly to the major findings of the study and the confirmation that successful use of e-learning requires clarity and agreement on what e-learning is and must be justified in the eyes of students and educators. Importantly, e-learning cannot be delivered in isolation from the educational culture in which the players exist, as this implicitly effects educational philosophy and ultimately engagement strategies of both educators and students. Through reflecting on personal past attempts to encourage the development and use of e-learning, I now have a greater understanding of where this focus within past change strategies was likely missing.

The second area of learning was a firmer realisation of the inherently messy and iterative nature of practical research. During this doctoral journey, the expected permanency of a clear and all-encompassing research proposal and protocol, written to robustly guide the study proved a myth. The reality was one of constantly revisiting and reflecting upon the agreed research proposal as my reading for the study drove me

deeper into the realms of ontological and epistemological nuances. The myriad of subtly differing theoretical perspectives encountered by researcher purporting to follow the same theoretical paradigm, further shaped my own perspectives. This resulted in the research questions evolving in subtle ways; for example, from what is the definition of elearning, to is there a common definition of elearning, to finally what definitions of e-learning are held by participants, as my understanding and interpretation of the interpretivist paradigm and case study method became more rounded. Additionally, as intended analysis methods clarified, alterations to the structure of the research questions from three questions to five allowed for clearer identification of educator and student responses. Each such iteration either strengthened the research method or aligned the research methods closer to the methodology and theoretical perspective I adhered to. Although often challenging and at times frustrating, in hindsight such wrestling with my own views on reality and 'truth' proved some of the most enlightening and important learning. This was an essential process I will ensure my own future research supervisees engage with.

The iterative nature of qualitative research also allowed for unexpected avenues to be explored which ultimately strengthened and deepened the case study findings, yet produced some tensions when advised by my supervisors to stay focused on the original study aims. The resulting post-doctoral study file will therefore keep me gainfully employed in this area for the foreseeable future!

With future research in mind, I am keen to validate the proposed Influences on e-learning model, and further explore the implications for the use of e-learning within healthcare related programmes in regard to consumerist student views and implications for the educator / student relationship. Furthermore, implementation of the Two Towers Healthcare e-learning Model in conjunction with an action learning approach to its evaluation would gauge the models usefulness to both academics and students who span both higher education and practice arenas.

I therefore remain enthused to continue researching this important topic and sharing findings with colleagues to affect future development both within the subject university and further afield.

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Appendix

Appendix A: Head of department letter

Michael Brownsell

Deputy Head of Preregistration Nursing

Faculty of Health and Social Care

University of Chester

Date:

Department Head

Department Name

Dear ****

I am currently undertaking doctoral studies exploring experiences of teaching staff and students with regard to e-learning within the university, and write to ask for permission to select your department as one of several for study.

Following review by the FHSC research ethics committee; I am using a case study methodological approach. I therefore require access to data from a broad range of sources in order to triangulate finding to answer the following research questions:

- RQ1. What definitions of 'e-learning' are held within the study population?
- RQ2a. How do educators engage with e-learning?
- RQ2b. How do learners engage in e-learning?
- RQ3a. Why do educators engage with e-learning as they do?
- RQ3b. Why do learners engage with e learning as they do?

I would like to approach a number of students and teaching staff for volunteers to complete an online questionnaire and select 2 to 3 educators for a semi structured 'one to one' interview and approximately 6 to 8 students for a focus group discussion.

The Data collection period is envisaged to last from approximately September 2011 until September 2012, and would entail considering departmentally specific public documents such as module descriptors, module web pages, and policy and guidance documents as outlines in the enclosed data shell.

The intention is to produce a university case study report after comparing findings across departments. All personal and individual data has been screened for anonymity. I aim to share this data for review by departmental heads and participants to ensure validity; and it is hoped that this would be of interest and use to department teaching teams in further developing their eLearning strategies.

I have enclosed the complete ethics approval form for information along with the interview and survey protocols, plus the aforementioned data collection shell.

Should you require any further information to aid your decision, please do not hesitate to contact Mike Brownsell on 07931304377 or m.brownsell@chester.ac.uk.

Thank you for considering this request for access to your department.

Yours sincerely,

Mike Brownsell

PhD Student

Appendix B: Educator invitation letter

Michael Brownsell

Deputy Head of Preregistration Nursing

Faculty of Health and Social Care

University of Chester

Date:

Department Name

An invitation to take part in a case study exploring perceptions and experiences of e-learning within undergraduate healthcare education.

Dear Colleague

You are being invited to take part in case study research exploring e-learning within your department. Your department has been selected as one of four delivering an undergraduate healthcare programme, and as such is of interest to the overall study.

Your invited participation will involve completion of an anonymised online questionnaire (which takes approximately 20 minutes to complete) by following the link below if receiving this letter electronically, or typing the address into your Brower:

https://www.surveymonkey.com/r/DeptA_Educator

If you prefer, you can complete a paper version of the questionnaire, copies of which have been left with your department administrator. If you choose this method, please seal the questionnaire in the attached addressed envelope and return via internal mail.

At the end of the questionnaire, you will be offered the opportunity to take part in a further semi structured interview with myself to explore our views and experiences of e-learning further. It is envisaged that this interview will take between 45 minutes to an hour and be recorded for later transcription and analysis. As with the questionnaire, all responses will be anonymous to the individual and department.

Thank you for taking the time to consider this request. I enclose further information on the aims of the study, and if you require further information, or wish to arrange to talk to the researcher, please contact m.brownsell@chester.ac.uk.

Mike Brownsell

Appendix C: Student invitation letter

Michael Brownsell

Deputy Head of Preregistration Nursing

Faculty of Health and Social Care

University of Chester

Date:

Programme Name

Department Name

An invitation to take part in a case study exploring perceptions and experiences of e-learning within undergraduate healthcare education.

Dear Student

You are being invited to take part in case study research exploring e-learning within your programme. Your department has been selected as one of four delivering an undergraduate healthcare programme, so your views are of interest to the overall study.

You are invited to complete an anonymised online questionnaire (which takes approximately 20 minutes to complete) by following the link below if receiving this letter electronically, or typing the address into your Brower:

https://www.surveymonkey.com/r/DeptA_Student

If you prefer, you can complete a paper version of the questionnaire, copies of which have been left with your department receptionist. If you choose this method, please seal the questionnaire in the attached addressed envelope and return via internal mail to the address above.

At the end of the questionnaire, you will be offered the opportunity to take part in a focus group with other students from your course to explore your views and experiences of e-learning further. It is expected that the meeting will take between 45 minutes to an hour and be recorded for later analysis. As with the questionnaire, all responses will be anonymous to the individual, programme, and department.

Thank you for taking the time to consider this request. Before you decide if you wish to participate, it is important for you to understand why the research is being done and what it will involve, so lease take time to read the enclosed information carefully, and discuss with others if you wish.

Mike Brownsell

Part time PhD Student.

Appendix D: Participation information leaflet

Study Title

Exploring perspectives and experiences of e-Learning within undergraduate healthcare education.

What is the purpose of the study?

The purpose of this study is to explore the views and experiences of teaching staff and students, when engaging in e-Learning within undergraduate professional healthcare education.

A fully anonymised written report will be produced at the end of the research period as part of a doctoral thesis, and anonymised findings from the study will be disseminated to inform future development of e-learning within the University and wider academic community.

Why have I been chosen?

You have been chosen because you are a student or member of staff from a department being examined using a case study research method. That means that should you choose to participate, the information and data received from you will be a small part in a wider information gathering process which aims to compare and contrast findings from differing sources such as questionnaires, interviews, focus groups, plus reviews of module web spaces and documentation.

Do I have to take part?

It is up to you to decide whether or not to take part. If you decide to take part you are still free to withdraw at any time without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect your education or work experience in any way.

What will happen to me if I take part?

As a student:

If you decide to take part as a student, you will be given this information sheet to keep and asked to sign the participation consent form. This will give your consent for a researcher from the Faculty of Health and Social Care at the University of Chester to invite you to complete a questionnaire. You may also be invited to attend a focus group discussion about e-learning with other students from your programme. During the focus group discussion, you will have the opportunity to raise and discuss your views and experiences relating to e-learning. The discussion is not expected to take longer than 45 minutes to one hour. With your permission, the meeting will be audio recorded. No-one will be identifiable in the final report.

As a member of staff:

If you decide to take part as a member of staff, you will be given this information sheet to keep and asked to sign the participation consent form. This will give your consent for a researcher from the Faculty of Health and Social Care at the University of Chester to invite you to complete a questionnaire. You may also be invited to attend a semi structured interview about e-learning within your department. During this discussion with a researcher, you will have the opportunity to raise and discuss your views and experiences relating to e-learning. The discussion is not expected to take longer than 45 minutes to one hour. With your permission, the meeting will be audio recorded. No-one will be identifiable in the final report.

Additionally, you will be asked for permission for the researcher to access module web spaces and other data pertaining to relevant modules based on your responses during the discussion.

What are the possible disadvantages and risks of taking part?

There are no disadvantages or risks foreseen in taking part in the study, beyond giving the time to complete the questionnaire and engage in the discussions should you choose to do so.

What are the possible benefits of taking part?

As a University student, lecturer or other stakeholder, it is possible that you may welcome the opportunity to share and discuss your views and experiences with the researcher. By taking part, you will be invited to reflect on your experiences of learning and teaching within your programme. You will also be contributing to the development of future teaching and learning strategies with the aim of benefiting students and educators in the future. As a student, this gives the opportunity to experience research in a more practical way, and add to your CV!

What if something goes wrong?

This is considered a low risk study where little is envisaged as potentially dangerous or upsetting, however if you have any concerns about the design or conduct of this study, please contact:

Professor Mike Thomas, Faculty of Health and Social Care, (Lead supervisor). University of Chester, Parkgate Road, Chester, CH1 4BJ. Tel: 01244 513088.

Will my taking part in the study be kept confidential?

Yes. All information which is collected about you, your programme, or department during the course of the research will be ensured for anonymity, and kept strictly confidential and secure. Only the researcher carrying out the research will have access to any identifying information until coded and anonymised.

All data will be stored in compliance with the University Research and Knowledge Transfer Office Guidelines on retention and storage of research data, March 2009 (available at: http://ganymede.chester.ac.uk.voyager.chester.ac.uk/index.php?page_id=1369210&group=6).

Data from interviews and questionnaires will be kept in electronic and hard copy form in a secure environment (respectively, password-accessed or held by the lead researcher under lock and key in the Department of Pre-registration Nursing) until 2020.

Individual participants will be coded and only identified by code in any published material. The interviews will be transcribed by the lead researcher.

What will happen to the results of the research study?

The results will be written up into a report for the purposes of doctoral theses, and for dissemination through academic publication thereafter. It is hoped that the findings may be used to further develop e-learning within the University and wider academic community. Individuals or departments who participate will never be identified in any subsequent report or publication.

Who is organising and funding the research?

The research is funded by the primary researcher as part of his studies, with support from the Faculty of Health and Social Care, University of Chester.

Who may I contact for further information?

If you would like more information about the research before you decide whether or not you would be willing to take part, please contact:

Mike Brownsell, m.brownsell@chester.ac.uk or via Faculty of Health & Social Care, University of Chester, Clatterbridge Hospital. Bebington, Wirral, CH63 4JY. Tel 01244 534052

Thank you for your interest in this research.

Mike Brownsell

PhD Student

Appendix E: Research participation consent form

Title of Project: Exploring perspectives and experiences of e-Learning within undergraduate healthcare education.

Name of Researcher: Michael Brownsell, Faculty of Health and Social Care.

Please initial box

I confirm that I have read and understood the participant information sheet, dated ……., for the above study and have had the opportunity to ask questions.	☐
I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason and without my education / and or legal rights being affected.	☐
I understand that as part of the case study, the researcher may invite me to a focus group (if a student) or interview (If a lecturer) and access relevant module web space and other public domain materials. I agree to take part in the above study.	☐

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of Person taking consent (If different from researcher)	Date	Signature
_____	_____	_____
Researcher	Date	Signature

Code Number: _____

Appendix F: Semi structured interview and focus group discussion guide.

Standard introduction:

My name is Mike and as you know I'm undertaking a doctorial study in staff and student experiences of elearning. Thanks for taking part, and can I assure you all information is anonymised and will be written in such a way as to identify no person, programme, or deparment in the future. The interview is not about write or wrong answers, but about your view and experiences of elearning, so I hope you feel able to be perfectly candid as we talk. I want the discussion to be guied by you, and what you have to say, but to get things going, can we start with what e-learning means to you?

Areas to be explored.

- **What does e-learning mean to you?**
  - Possible prompts: can you define it / explain what it does?
  - So what's Blended learning?
- **Why do you use e-learning?**
  - Possible prompts: directed or own accord?
- Views on level of readiness for e-learning of staff and students
  - Possible prompts: I.T competence / infrastrucutre / rationale?
- **I'm interested in whether e-learning is a perferred learning and teaching style**
  - Possible prompts: what would your first choice be?
- **What are your views on using the discussion boards and e-forums /blogs etc.**
  - Possible prompts: How do you feeel using it? Benefits / Drawbacks / effectiveness?
- **I'd also like to explore expectations and experiences on benefits of e-learning / e-teaching ?**
  - Possible prompts: Time / Access / Resources / Flexibility ?
  - What of challenges of e-learning / e-teaching ?
  - Time / Access / infrastructure / I.T Skills?
  - So what helps e-learning experience
  - So what hinders e-learning experience
- **Can I now turn to Considering organisation and use of the module spaces?**
  - Possible prompts: Aims of the module space
  - Views on module space authoring /frequency of use ?
- **So can you summarise your expectations and the realities of e-learning experience:**
  - Possible prompt: Satisfaction level?

You have nicely covered my questions in the discussion; is there anything you would like to raise that we have not had a chance to discuss before we finish?

Appendix G: Student questionnaire (paper version)

Thank you for taking the time to complete this questionnaire.

- It takes an average of 20 minutes.
- It is anonymous and purely voluntary.

Further Information

Your university department has kindly agreed to allow an in-depth case study of how students and teaching staff engage with e-learning. This questionnaire forms part of that research method, which has received ethical approval from the University of Chester.

All responses will be fully anonymous, and individual participant demographics will be coded and known only to the researcher for the purpose of interpreting results. No individual participant or departments will be identified in any final report or subsequent publication, however the aim is for the findings to inform participating departments during future e-learning development.

In addition to this questionnaire, several complementary methods of data collection are being used including semi - structured interviews with volunteers from across the department and wider university. If you are interested in participating in the later interviews, please indicate this when asked at the finish.

Participation in this questionnaire and any other aspect of the case study is voluntary, and you can withdraw or opt out from the study at any time should you choose to do so.

The survey should take approximately 20 to 25 minutes to complete the tick responses, however there is often the option to provide free text details and explanation if you wish to expand further on your answers.

It is hoped that the anonymity of response will empower participants to be open and frank when answering. Please be as detailed in writing free text responses as time and commitments allow.

The ultimate aim of this study is to gain as deep and comprehensive an understanding of participant views and experiences as possible.

Thank you once again for you time and effort.

If you would like further information on this study please do not hesitate to contact Mike Brownsell via m.brownsell@chester.ac.uk

Q 1. Demographics (To aid data analysis only)

Q 1.1 AGE

25-28	29-32	33-36	37-40	41-44	45-48	49-52	53-56	57-60	61-64	65-68	Over 68	I decline to say
○	○	○	○	○	○	○	○	○	○	○	○	○

Q 1.2 Ethnic Origin

I decline to say	○
African Caribbean	○
Indian	○
White -UK	○
Other White background	○
Black or Black British	○
Other Black background	○
Asian or Asian British	○
Pakistani	○
Chinese	○
Other Asian background	○
Mixed	○
Other Mixed background	○
Other	○

Q 1.3 Sex

I decline to say	○
Male	○
Female	○

Please turn over

Q 2: Previous Information Technology (I.T.) Experience

Q 2.1: I.T. Qualifications

None	GCSE or equivalent	European Computer Driving Licence	Professional / Higher Education I.T. qualification
○	○	○	○

Q 2.2: Previous Elearning Experience

None	Some elearning at school	Some elearning post school	Highly experienced at elearning
○	○	○	○

Q 2.3: Computer literacy

Not computer literate - unable to use e-learning	Not confident - Use basic e-learning tools only	Confident - Able to use most e-learning tools	Very confident - Can use all e-learning functions
○	○	○	○

Q 2.4: Please name your programme of study?

Q 2.5: Please list all modules that use a module web space?

Q 3: What does the term e-learning mean to you?

Q 4: What does the term 'Blended Learning' mean to you?

Please turn over

Q 5. Please read the following two statements and select the option that most closely relates to your use of e-learning and the module web space.

	Use almost exclusively	Use as the main learning activity	Use as a minor learning support activity	Never use this approach	Don't know
a. I use e-learning resources that require students to communicate with each other to learn via the discussion groups and e-forums.	○	○	○	○	○
b. I use e-learning resources that mainly help students to access information and reference materials	○	○	○	○	○

Optional comments

Q 6. Please read the following statements and select the option that most closely relates to your preference for e-learning

	Strongly prefer this approach	Slight preference	Slight dislike	Strong dislike of this approach
a. I prefer e-learning to be closely guided and tightly structured regarding time and activity	○	○	○	○
b. I prefer e-learning which is loosely timed with high levels of student control and choice of activity	○	○	○	○

Optional comments

Q 7. This question is in 2 parts: Please read the following statements and select one option per row that most closely relates to you.

How often, if at all, do you engage in the following?

7.1: You Personally, outside of studying	Never	Rarely (once or twice a year)	Sometimes (at least once every two months)	Regularly (at least once a month)	Frequently (at least once a week)	Don't know
a. Use social networking websites (e.g. Facebook)	○	○	○	○	○	○
b. Access the internet from a home study area	○	○	○	○	○	○
c. Watch CD-ROMS, DVD / Videos or live TV on websites	○	○	○	○	○	○
d. Upload video or photo content onto the internet	○	○	○	○	○	○
e. Write information or views for wikis or blogs	○	○	○	○	○	○
f. Access databases, library resources or search engines to gain information	○	○	○	○	○	○
g. Download podcasts	○	○	○	○	○	○
h. Undertake online assessments / quizzes	○	○	○	○	○	○
I. Undertake online reflective exercises	○	○	○	○	○	○
j. Use web search functions on a mobile phone	○	○	○	○	○	○
k. Share information in asyncronous (non-instant) discussion boards	○	○	○	○	○	○
l. Participate in syncronous (live) chat rooms	○	○	○	○	○	○
m. Take part in an online community, for example a “virtual world” such as Second Life or a gaming community	○	○	○	○	○	○

Optional Comment

Now turn over for part 2.

Q 7. Part 2: Please read the following statements carefully and select one option per row that most closely relates to you

How often, if at all, do you engage in the following?

7.2: As an expectation of the module e-learning requirements	I'm never expected to use online materials in this way	I'm expected to use, but do not use materials in this way	I often use these materials less than expected	I sometimes use these materials less than expected	I always use these materials as expected	I use these materials more than expected
a. Use social networking websites (e.g. Facebook)	○	○	○	○	○	○
b. Access the internet from a home study area	○	○	○	○	○	○
c. Watch CD-ROMS, DVD / Videos or live TV on websites	○	○	○	○	○	○
d. Upload video or photo content onto the internet	○	○	○	○	○	○
e. Write information or views for wikis or blogs	○	○	○	○	○	○
f. Access databases, library resources or search engines to gain information	○	○	○	○	○	○
g. Download podcasts	○	○	○	○	○	○
h. Undertake online assessments / quizzes	○	○	○	○	○	○
I. Undertake online reflective exercises	○	○	○	○	○	○
j. Use web search functions on a mobile phone	○	○	○	○	○	○
k. Share information in asyncronous (non-instant) discussion boards	○	○	○	○	○	○
l. Participate in syncronous (live) chat rooms	○	○	○	○	○	○
m. Take part in an online community, for example a “virtual world” such as Second Life or a gaming community	○	○	○	○	○	○

Optional Comment

Q 8. As a student, has e-learning benefited you in any of the following ways?

Please tick one answer per row.

Benefit to you or how you study	Never	Rarely (once or twice a year)	Sometimes (at least once every two months)	Regularly (at least once a month)	Frequently (at least once a week)	Don't know	Not applicable
a. Use social networking websites (e.g. Facebook)	○	○	○	○	○	○	○
b. Access the internet from a home study area	○	○	○	○	○	○	○
c. Watch CD-ROMS, DVD / Videos or live TV on websites	○	○	○	○	○	○	○
d. Upload video or photo content onto the internet	○	○	○	○	○	○	○
e. Write information or views for wikis or blogs	○	○	○	○	○	○	○
f. Access databases, library resources or search engines to gain information	○	○	○	○	○	○	○
g. Download podcasts	○	○	○	○	○	○	○
h. Undertake online assessments / quizzes	○	○	○	○	○	○	○
I. Undertake online reflective exercises	○	○	○	○	○	○	○
j. Use web search functions on a mobile phone	○	○	○	○	○	○	○
k. Share information in asyncronous (non-instant) discussion boards	○	○	○	○	○	○	○
l. Participate in syncronous (live) chat rooms	○	○	○	○	○	○	○
m. Take part in an online community, for example a “virtual world” such as Second Life or a gaming community	○	○	○	○	○	○	○

Optional Comment

Q 9: Has e-Learning produced any challenges to your learning experience such as?

Please tick one answer per row.

	Never	Rarely	Sometimes	Often	Always	Not applicable
a. An inability to engage in e-learning as expected due to insufficient computer literacy skills	○	○	○	○	○	○
b. Having to compete for computer access with other family members at home	○	○	○	○	○	○
c. Feeling isolated from students during e-learning engagement	○	○	○	○	○	○
d. Feeling a lack of tutor and student interaction	○	○	○	○	○	○
e. Unable to self-motivate to keep to study deadlines	○	○	○	○	○	○
f. Feeling uncomfortable about writing to a discussion board	○	○	○	○	○	○
g. A lack of time to engage in materials outside of standard University study hours (9-5, Monday-Friday)	○	○	○	○	○	○
h. Confusion over the purpose of e-learning	○	○	○	○	○	○
i. Feeling constrained when elearning, rather than being allowed to learn more freely	○	○	○	○	○	○
j. Difficulty understanding the e-content	○	○	○	○	○	○
k. Finding e-learning tasks simplistic or patronising	○	○	○	○	○	○
l. Inability to access online materials due to website functionality failure or slow downloads	○	○	○	○	○	○

Optional Comment

10: Please read the following statements and select one option per row that most closely relate to your level of agreement.

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know/Not Applicable
a. I am sufficiently computer literate to meet student learning needs	○	○	○	○	○
b. Online discussion boards / forums are central to effective e-learning	○	○	○	○	○
c. Online periodic assessments / quizzes contribute significantly to effective E-learning	○	○	○	○	○
d. The level of information technology and e-learning support within the University is insufficient for my needs	○	○	○	○	○
e. If students are expected to learn flexibly during evenings and weekends, so lecturers should be available to facilitate that learning in the same flexible way	○	○	○	○	○
f. I don't have time to engage flexibly with e-learning activities outside of normal university campus hours (9-5)	○	○	○	○	○
g. When learning is mediated through technology, this diminishes the value of teaching	○	○	○	○	○
h. I think it is a good idea to use student's social websites (such as Facebook) as a means of teaching or giving feedback	○	○	○	○	○
i. Due to the open nature of the World Wide Web, it is almost inevitable that students will plagiarise the work of others	○	○	○	○	○
j. For myself, learning is best as a blend of face to face and e-learning activities	○	○	○	○	○
k. e-learning is when students are left to learn on their own	○	○	○	○	○
l. e-learning is a poor motivator to learn and keep to deadlines	○	○	○	○	○

Optional Comment

Thank you for taking the time to complete this questionnaire. Be assured that all identifiable responses will be kept in strictest confidence and anonymised.

If answering these questions has raised your interest and you would like to offer further comment and opinion, the research method includes short focus group interviews later in the year.

If you would be willing to participate further or be contacted to elaborate or clarify any of your responses, please complete the information below.

Thanks once again,

Mike

Mike Brownsell
m.brownsell@chester.ac.uk

I am willing to be invited to a focus group in the future:

Name: ……..

Programme / Department: ……

Email: ……..

Telephone No. ……

Appendix H: Educator questionnaire (paper version)

Thank you for taking the time to complete this questionnaire.

- It takes an average of 20 minutes.
- It is anonymous and purely voluntary.

Further Information

Your university department has kindly agreed to allow an in-depth case study of how students and teaching staff engage with e-learning. This questionnaire forms part of that research method, which has received ethical approval from the University of Chester.

All responses will be fully anonymous, and individual participant demographics will be coded and known only to the researcher for the purpose of interpreting results. No individual participant or departments will be identified in any final report or subsequent publication, however the aim is for the findings to inform participating departments during future e-learning development.

In addition to this questionnaire, several complementary methods of data collection are being used including semi - structured interviews with volunteers from across the department and wider university. If you are interested in participating in the later interviews, please indicate this when asked at the finish.

Participation in this questionnaire and any other aspect of the case study is voluntary, and you can withdraw or opt out from the study at any time should you choose to do so.

The survey should take approximately 20 to 25 minutes to complete the tick responses, however there is often the option to provide free text details and explanation if you wish to expand further on your answers.

It is hoped that the anonymity of response will empower participants to be open and frank when answering. Please be as detailed in writing free text responses as time and commitments allow.

The ultimate aim of this study is to gain as deep and comprehensive an understanding of participant views and experiences as possible.

Thank you once again for you time and effort.

If you would like further information on this study please do not hesitate to contact Mike Brownsell via m.brownsell@chester.ac.uk

Q 1. Demographics (To aid data analysis only)

Q 1.1 AGE

25-28	29-32	33-36	37-40	41-44	45-48	49-52	53-56	57-60	61-64	65-68	Over 68	I decline to say
○	○	○	○	○	○	○	○	○	○	○	○	○

Q 1.2 Ethnic Origin

I decline to say	○
African Caribbean	○
Indian	○
White -UK	○
Other White background	○
Black or Black British	○
Other Black background	○
Asian or Asian British	○
Pakistani	○
Chinese	○
Other Asian background	○
Mixed	○
Other Mixed background	○
Other	○

Q 1.3 Sex

I decline to say	○
Male	○
Female	○

Please turn over

Q 2: Previous Information Technology (I.T.) Experience

Q 2.1: Previous E-education Experience

None	GCSE or equivalent	European Computer Driving Licence	E-Teaching qualification	Professional / Higher Ed' I.T. qualification
O	O	O	O	O

Q 2.2: Previous E-learning Experience

None	Some e-learning at school	Some e-learning post school	Self-taught experience of e-teaching	Institution supported course in e-teaching	Highly experienced e-teacher
O	O	O	O	O	O

Q 2.3: Computer literacy

Not computer literate - unable to use e-learning/teaching	Not confident - Use basic e-authoring functions only	Confident - Able to use most e-learning tools	Very confident - Use all e-learning tools / functions
○	○	○	○

Please turn over

Q 3: What does the term e-learning mean to you?

Q 4: What does the term 'Blended Learning' mean to you?

Please turn over

Q 5. Please read the following statements and select one option per row that most closely relates to the way you write e-learning materials

	Use almost exclusively	Use as a key requirement	Use as minor learning support activity	Never use this approach	Don't know
a. I write e-learning resources that require students to communicate with each other to learn via the discussion groups and e-forums.	○	○	○	○	○
b. I write e-learning resources that mainly help students to access information and reference materials.	○	○	○	○	○

Optional comments

Q 6. Please select the option that most closely relates to your preference when writing e-learning materials

	Strong preference	Slight preference	Slight aversion	Strong aversion
a. I prefer e-learning facilitation strategies to be closely guided and tightly structured regarding time and activity	○	○	○	○
b. I prefer e-learning facilitation which is loosely timed with high levels of student control and choice of activity	○	○	○	○

Optional comments

Q 7. This question is in 2 parts: Please read the following statements and select one option per row that most closely relates to your views.

7.1 How often, if at all, do you and your students engage in the following?

7.1.You Personally, external to module authoring requirements	**Never**	**Rarely** (once or twice a year)	**Sometimes** (at least once every two months)	**Regularly** (at least once a month)	**Frequently** (at least once a week)	**Don't know**
a. Use social networking websites (e.g. Facebook)	○	○	○	○	○	○
b. Access the internet from a home study area	○	○	○	○	○	○
c. Watch CD-ROMS, DVD / Videos or live TV on websites	○	○	○	○	○	○
d. Upload video or photo content onto the internet	○	○	○	○	○	○
e. Write information or views for wikis or blogs	○	○	○	○	○	○
f. Access databases, library resources or search engines to gain information	○	○	○	○	○	○
g. Download podcasts	○	○	○	○	○	○
h. Undertake online assessments / quizzes	○	○	○	○	○	○
I. Undertake online reflective exercises	○	○	○	○	○	○
j. Use web search functions on a mobile phone	○	○	○	○	○	○
k. Share information in asyncronous (non-instant) discussion boards	○	○	○	○	○	○
l. Participate in syncronous (live) chat rooms	○	○	○	○	○	○
m. Take part in an online community, for example a "virtual world" such as Second Life or a gaming community	○	○	○	○	○	○

Optional Comment

Now turn over for part 2.

Q 7. Part 2: Please read the following statements carefully and select one option per row that most closely relates to your view.

How often, if at all, do your students engage in the following?

7.2. Your Students: As an expected part of module e-learning	**I Never expect students to use online course materials in this way**	**I expect Students to use** materials in this way, **but I don't know if they engage as expected**	**I expect Students to use** materials in this way, **but they rarely do**	**I expect Students** to use materials in this way, **but note minimal engagement**	**I expect and Students do** use online materials in this way **consistently**	**I expect and Students do** use online materials in this way **more than expected**
a. Use social networking websites (e.g. Facebook)	○	○	○	○	○	○
b. Access the internet from a home study area	○	○	○	○	○	○
c. Watch CD-ROMS, DVD / Videos or live TV on websites	○	○	○	○	○	○
d. Upload video or photo content onto the internet	○	○	○	○	○	○
e. Write information or views for wikis or blogs	○	○	○	○	○	○
f. Access databases, library resources or search engines to gain information	○	○	○	○	○	○
g. Download podcasts	○	○	○	○	○	○
h. Undertake online assessments / quizzes	○	○	○	○	○	○
I. Undertake online reflective exercises	○	○	○	○	○	○
j. Use web search functions on a mobile phone	○	○	○	○	○	○
k. Share information in asyncronous (non-instant) discussion boards	○	○	○	○	○	○
l. Participate in syncronous (live) chat rooms	○	○	○	○	○	○
m. Take part in an online community, for example a "virtual world" such as Second Life or a gaming community	○	○	○	○	○	○

Optional Comment

Q 8. This question is in 2 parts: Please read the following statements and select one option per row that most closely relates to your views.

Q 8.1. Do you think e-learning provides benefit to you in any of the following ways?

8.1 Benefit to YOU or how you work	Never	Rarely (once or twice a year)	Sometimes (at least once every two months)	Regularly (at least once a month)	Frequently (at least once a week)	Don't know	Not applicable
a. Use social networking websites (e.g. Facebook)	○	○	○	○	○	○	○
b. Access the internet from a home study area	○	○	○	○	○	○	○
c. Watch CD-ROMS, DVD / Videos or live TV on websites	○	○	○	○	○	○	○
d. Upload video or photo content onto the internet	○	○	○	○	○	○	○
e. Write information or views for wikis or blogs	○	○	○	○	○	○	○
f. Access databases, library resources or search engines to gain information	○	○	○	○	○	○	○
g. Download podcasts	○	○	○	○	○	○	○
h. Undertake online assessments / quizzes	○	○	○	○	○	○	○
I. Undertake online reflective exercises	○	○	○	○	○	○	○
j. Use web search functions on a mobile phone	○	○	○	○	○	○	○
k. Share information in asyncronous (non-instant) discussion boards	○	○	○	○	○	○	○
l. Participate in syncronous (live) chat rooms	○	○	○	○	○	○	○
m. Take part in an online community, for example a "virtual world" such as Second Life or a gaming community	○	○	○	○	○	○	○

Optional Comment

Q 8. Part 2: Please read the following statements and select one option per row that most closely relates to your views.

Q 8.2. Do you think e-learning provides benefit to your students in any of the following ways?

8.2 Benefit to YOUR STUDENTS or their learning	Yes	No	Don't know	Not applicable
a. Use social networking websites (e.g. Facebook)	○	○	○	○
b. Access the internet from a home study area	○	○	○	○
c. Watch CD-ROMS, DVD / Videos or live TV on websites	○	○	○	○
d. Upload video or photo content onto the internet	○	○	○	○
e. Write information or views for wikis or blogs	○	○	○	○
f. Access databases, library resources or search engines to gain information	○	○	○	○
g. Download podcasts	○	○	○	○
h. Undertake online assessments / quizzes	○	○	○	○
I. Undertake online reflective exercises	○	○	○	○
j. Use web search functions on a mobile phone	○	○	○	○
k. Share information in asyncronous (non-instant) discussion boards	○	○	○	○
l. Participate in syncronous (live) chat rooms	○	○	○	○
m. Take part in an online community, for example a "virtual world" such as Second Life or a gaming community	○	○	○	○

Optional Comment

Q 9: This question is in 2 parts: Please read the following statements and select one option per row that most closely relates to your views.

Q 9.1 Has e-Learning produced any challenges to your teaching experience such as?

9.1 YOU and your Teaching	Never	Rarely	Sometimes	Often	Always	Not applicable
a. An inability to engage in e-learning as expected due to insufficient computer literacy skills	○	○	○	○	○	○
b. Having to compete for computer access with other family members at home	○	○	○	○	○	○
c. Feeling isolated from students during e-learning engagement	○	○	○	○	○	○
d. Feeling a lack of tutor and student interaction	○	○	○	○	○	○
e. Unable to self-motivate to keep to study deadlines	○	○	○	○	○	○
f. Feeling uncomfortable about writing to a discussion board	○	○	○	○	○	○
g. A lack of time to engage in materials outside of standard University study hours (9-5, Monday-Friday)	○	○	○	○	○	○
h. Confusion over the purpose of e-learning	○	○	○	○	○	○
i. Feeling constrained when elearning, rather than being allowed to learn more freely	○	○	○	○	○	○
j. Difficulty understanding the e-content	○	○	○	○	○	○
k. Finding e-learning tasks simplistic or patronising	○	○	○	○	○	○
l. Inability to access online materials due to website functionality failure or slow downloads	○	○	○	○	○	○

Optional Comment

Q 9: Part 2: Please read the following statements and select one option per row that most closely relates to your views.

Q 9.2 Has e-Learning produced any challenges to your student's learning such as?

9.2 The Students and their learning	**Never-** (Never affects students)	**Rarely -** (Affects a small number of students)	**Sometimes -** (Affects a significant number of students)	**Most times-** (Affects the majority of students)	**Always-** (Affects all students)	**Not applicable**
a. An inability to engage in e-learning as expected due to insufficient computer literacy skills	○	○	○	○	○	○
b. Having to compete for computer access with other family members at home	○	○	○	○	○	○
c. Feeling isolated from students during e-learning engagement	○	○	○	○	○	○
d. Feeling a lack of tutor and student interaction	○	○	○	○	○	○
e. Unable to self-motivate to keep to study deadlines	○	○	○	○	○	○
f. Feeling uncomfortable about writing to a discussion board	○	○	○	○	○	○
g. A lack of time to engage in materials outside of standard University study hours (9-5, Monday-Friday)	○	○	○	○	○	○
h. Confusion over the purpose of e-learning	○	○	○	○	○	○
i. Feeling constrained when elearning, rather than being allowed to learn more freely	○	○	○	○	○	○
j. Difficulty understanding the e-content	○	○	○	○	○	○
k. Finding e-learning tasks simplistic or patronising	○	○	○	○	○	○
l. Inability to access online materials due to website functionality failure or slow downloads	○	○	○	○	○	○

Optional Comment

Q 10: Please read the following statements and select one option per row that most closely relate to your level of agreement.

	Strongly agree	Agree	Disagree	Strongly disagree	Don't know/Not Applicable
a. I am sufficiently computer literate to meet student learning needs	○	○	○	○	○
b. Online discussion boards / forums are central to effective e-learning	○	○	○	○	○
c. Online periodic assessments / quizzes contribute significantly to effective E-learning	○	○	○	○	○
d. The level of information technology and e-learning support within the University is insufficient for my needs	○	○	○	○	○
e. If students are expected to learn flexibly during evenings and weekends, so lecturers should be available to facilitate in the same flexible way	○	○	○	○	○
f. I don't have time to engage flexibly with e-learning activities outside of normal university campus hours (9-5)	○	○	○	○	○
g. When learning is mediated through technology, this diminishes the value of teaching	○	○	○	○	○
h. I think it is a good idea to use student's social websites (such as Facebook) as a means of teaching or giving feedback	○	○	○	○	○
i. Due to the open nature of the World Wide Web, it is almost inevitable that students will plagiarise the work of others	○	○	○	○	○
j. For myself, learning is best as a blend of face to face and e-learning activities	○	○	○	○	○
k. e-learning is when students are left to learn on their own	○	○	○	○	○
l. e-learning is a poor motivator to learn and keep to deadlines	○	○	○	○	○

Optional Comment

Thank you for taking the time to complete this questionnaire. Be assured that all identifiable responses will be kept in strictest confidence and anonymised.

If answering these questions has raised your interest and you would like to offer further comment and opinion, the research method includes an opportunity to engage in semi structured interviews later in the year.

If you would be willing to participate further or be contacted to elaborate or clarify any of your responses, please complete the information below.

Thanks once again,

Mike

Mike Brownsell
m.brownsell@chester.ac.uk

I am willing to be invited to an interview in the future:

Name: …….

Programme / Department: ……..

Email: …….

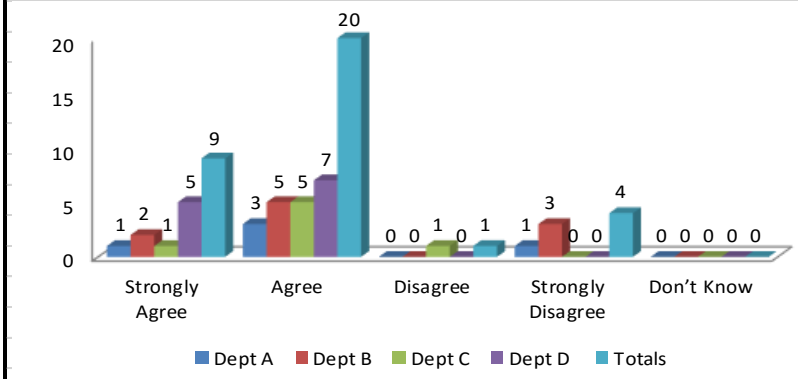
Telephone No. ……

Appendix I: Question 10. Questionnaire results by department.

Q10a Educator Data

a. I am sufficiently computer literate to meet student learning needs

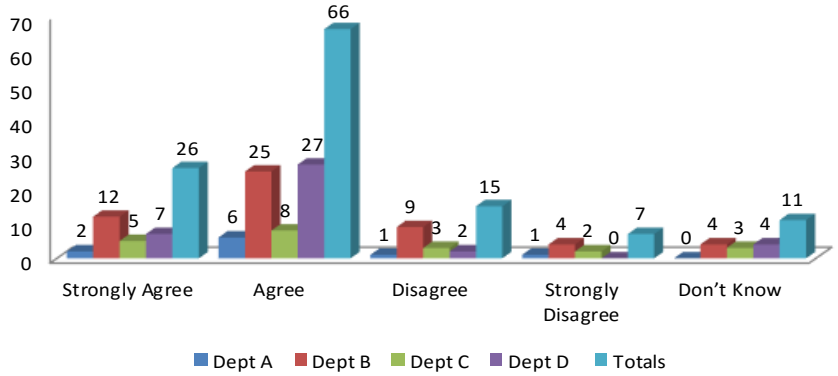
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	1	**3**	0	1	0	14	70%
Dept B	2	**5**	0	3	0	26	65%
Dept C	1	**5**	1	0	0	21	75%
Dept D	5	**7**	0	0	0	41	85%
Totals	9	**20**	1	4	0	102	75%



Q10a Student Data

a. I am sufficiently computer literate to meet my learning needs

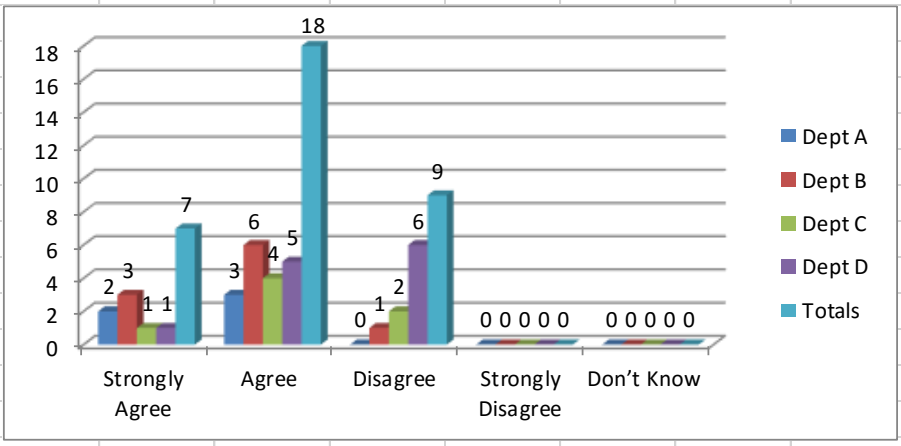
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	2	**6**	1	1	0	29	73%
Dept B	12	**25**	9	4	4	145	67%
Dept C	5	**8**	3	2	3	52	62%
Dept D	7	**27**	2	0	4	113	71%
Totals	26	**66**	15	7	11	339	68%



Q10b Educator Data

b. Online discussion boards / forums are central to effective e-learning

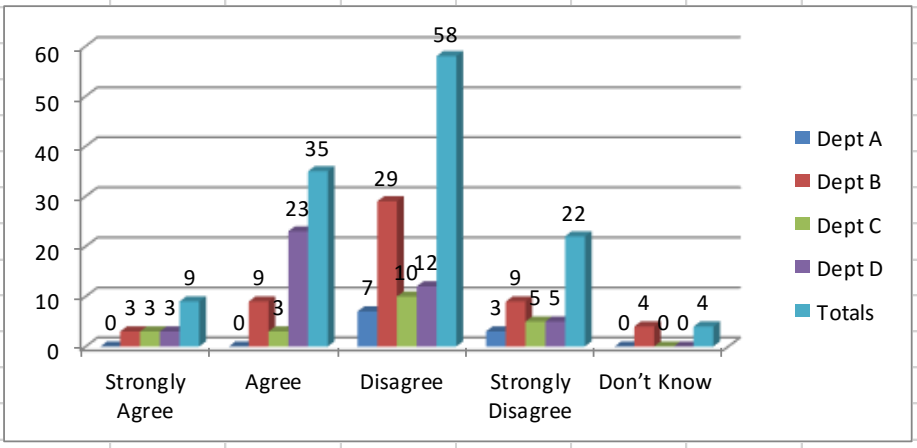
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	2	**3**	0	0	0	17	85%
Dept B	3	**6**	1	0	0	32	80%
Dept C	1	**4**	2	0	0	20	71%
Dept D	1	5	**6**	0	0	31	65%
Totals	**7**	**18**	**9**	**0**	**0**	100	74%



Q10b Student Data

b. Online discussion boards / forums are central to effective e-learning

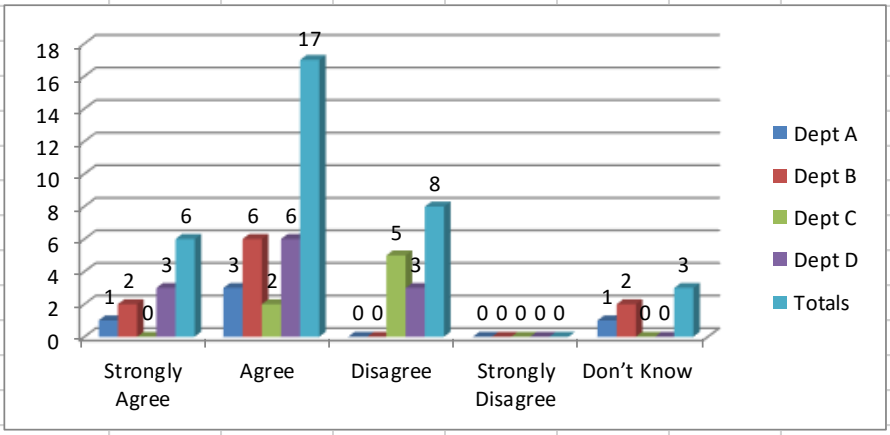
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	0	0	**7**	3	0	17	43%
Dept B	3	9	**29**	9	4	106	49%
Dept C	3	3	**10**	5	0	46	55%
Dept D	3	**23**	12	5	0	110	69%
Totals	9	35	**58**	22	4	279	56%



Q10c Educator Data

c. Online periodic assessments /quizzes contribute significantly to Effective E-learning

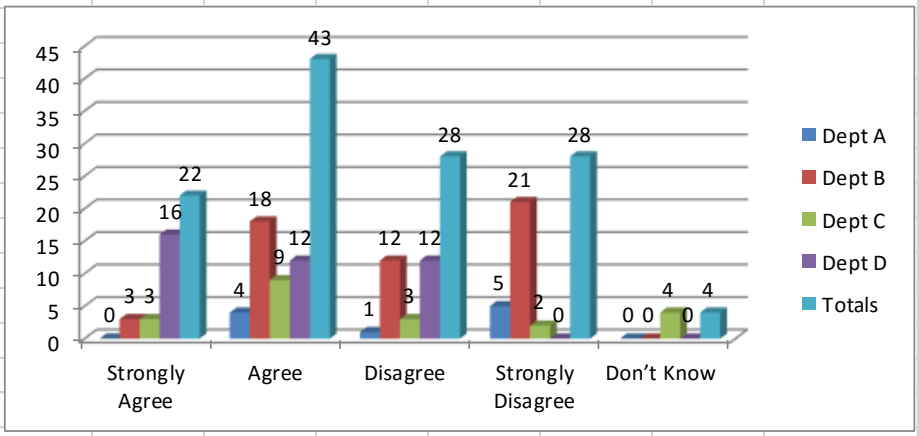
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	1	**3**	0	0	1	13	65%
Dept B	2	**6**	0	0	2	26	65%
Dept C	0	2	**5**	0	0	16	57%
Dept D	**3**	**6**	**3**	0	0	36	75%
Totals	**6**	**17**	**8**	**0**	**3**	91	67%



Q10c Student Data

c. Online periodic assessments /quizzes contribute significantly to Effective E-learning

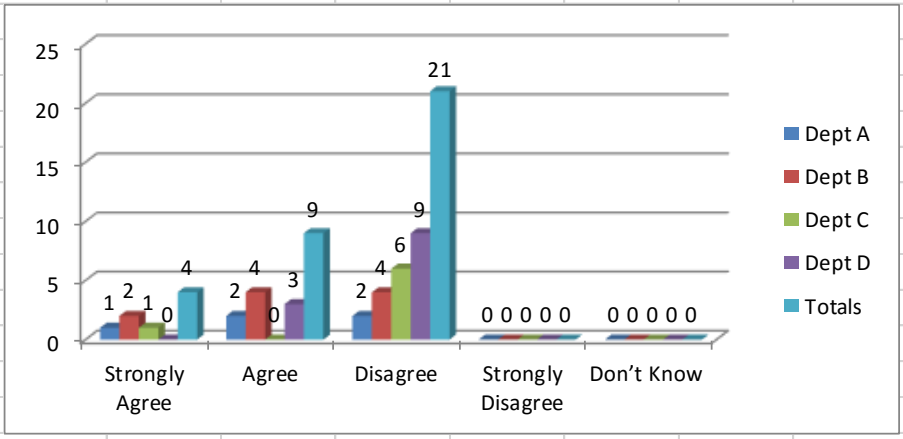
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	0	4	1	**5**	0	19	48%
Dept B	3	18	12	**21**	0	111	51%
Dept C	3	**9**	3	2	4	47	56%
Dept D	**16**	12	12	0	0	124	78%
Totals	22	**43**	28	28	4	301	60%



Q10d Educator Data

d. The level of information technology and e-learning support within the University is insufficient for my needs

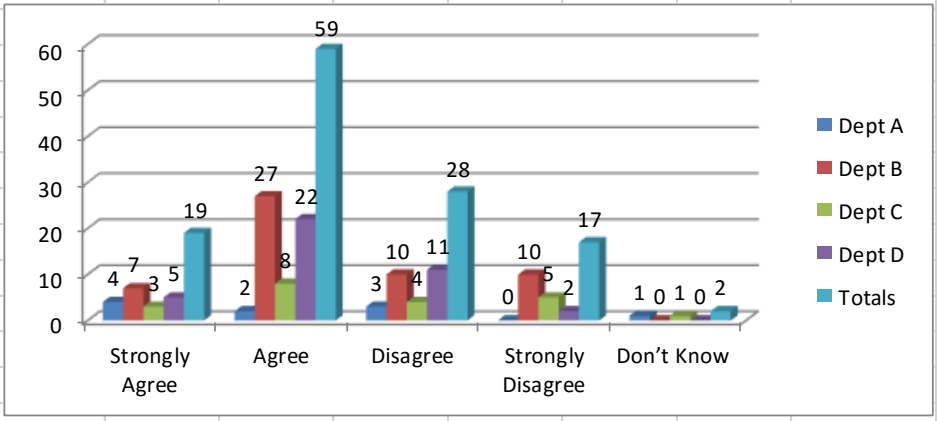
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	1	**2**	**2**	0	0	11	55%
Dept B	2	**4**	**4**	0	0	22	55%
Dept C	1	0	**6**	0	0	19	68%
Dept D	0	3	**9**	0	0	33	69%
Totals	**4**	**9**	**21**	**0**	**0**	85	63%



Q10d Student Data

d. The level of information technology and e-learning support within the University is insufficient for my needs

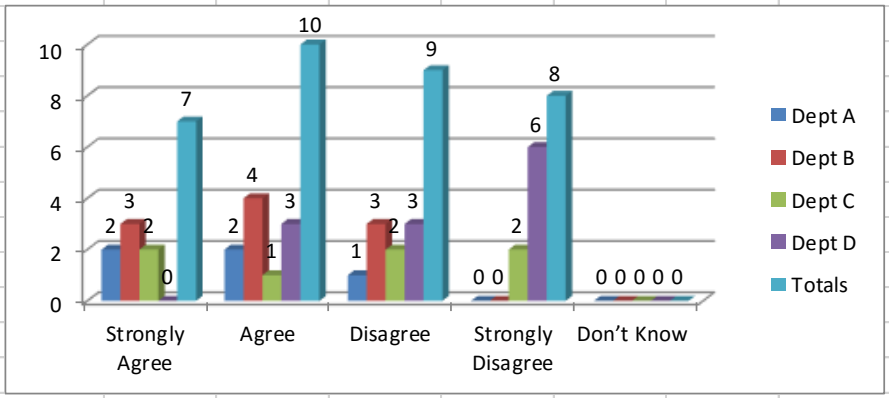
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	4	2	3	**0**	1	17	43%
Dept B	7	**27**	10	10	0	131	61%
Dept C	3	**8**	4	5	1	51	61%
Dept D	5	**22**	11	2	0	90	56%
Totals	19	**59**	28	17	2	289	58%



Q10e Educator Data

e. If students are expected to learn flexibly during evenings and weekends, so lecturers should be available to facilitate that learning in the same flexible way

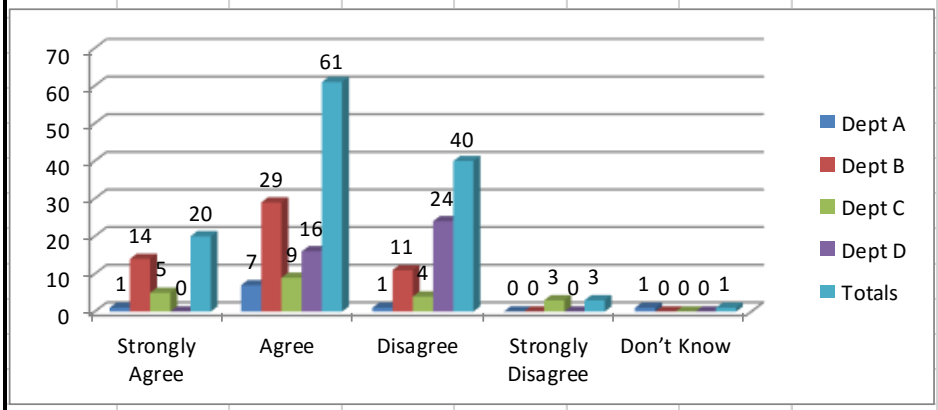
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	**2**	**2**	1	0	0	16	80%
Dept B	3	**4**	3	0	0	30	75%
Dept C	**2**	1	**2**	**2**	0	17	61%
Dept D	0	3	3	**6**	0	21	44%
Totals	**7**	**10**	**9**	**8**	**0**	84	62%



Q10e Student Data

e. If students are expected to learn flexibly during evenings and weekends, so lecturers should be available to facilitate that learning in the same flexible way

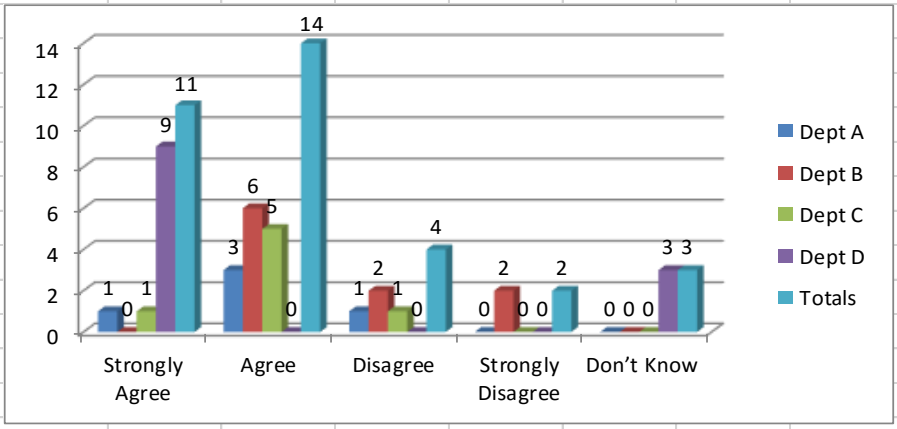
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	1	**7**	1	0	1	27	68%
Dept B	14	**29**	11	0	0	165	76%
Dept C	5	**9**	4	3	0	58	69%
Dept D	0	16	**24**	0	0	96	60%
Totals	20	**61**	40	3	1	346	69%



Q10f Educator Data

f. I don't have time to engage flexibly with e-learning activities outside of normal university campus hours (9-5)

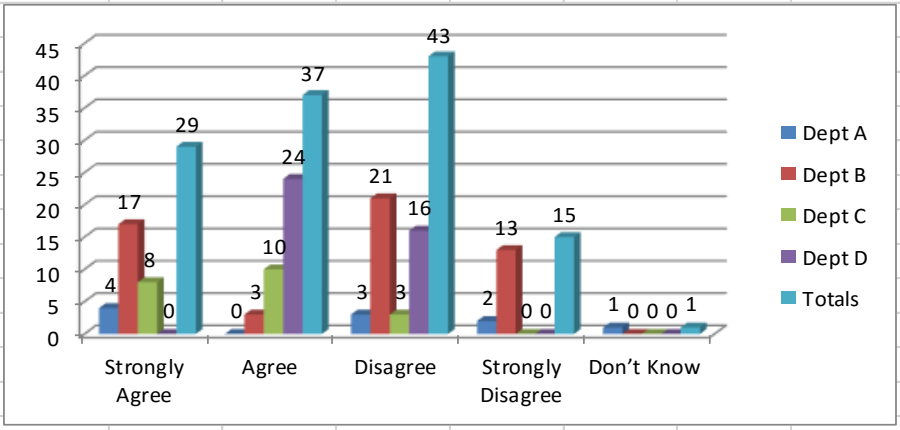
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	1	3	**1**	0	0	10	50%
Dept B	0	**6**	2	2	0	26	65%
Dept C	1	**5**	1	0	0	14	50%
Dept D	**9**	0	0	0	3	9	19%
Totals	**11**	**14**	**4**	**2**	**3**	59	43%



Q10f Student Data

f. I don't have time to engage flexibly with e-learning activities outside of normal university campus hours (9-5)

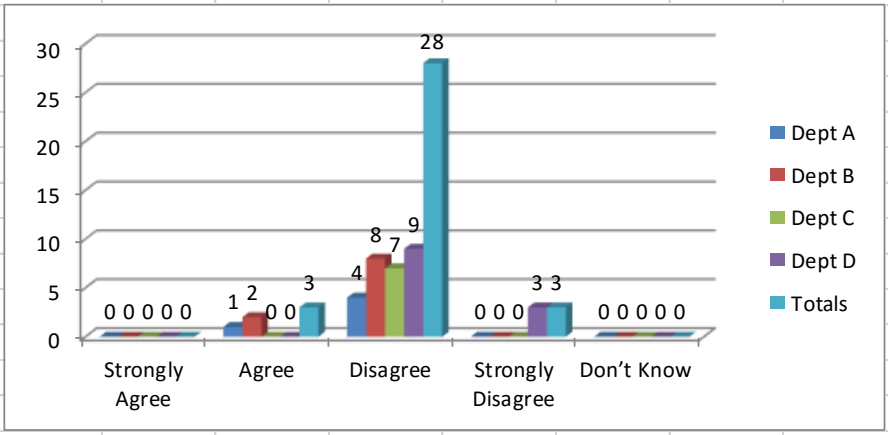
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	4	0	3	**2**	1	21	53%
Dept B	17	3	**21**	13	0	138	64%
Dept C	8	**10**	3	0	0	37	44%
Dept D	0	**24**	16	0	0	96	60%
Totals	29	37	**43**	15	1	292	58%



Q10g Educator Data

g. When learning is mediated through technology, this diminishes the value of teaching

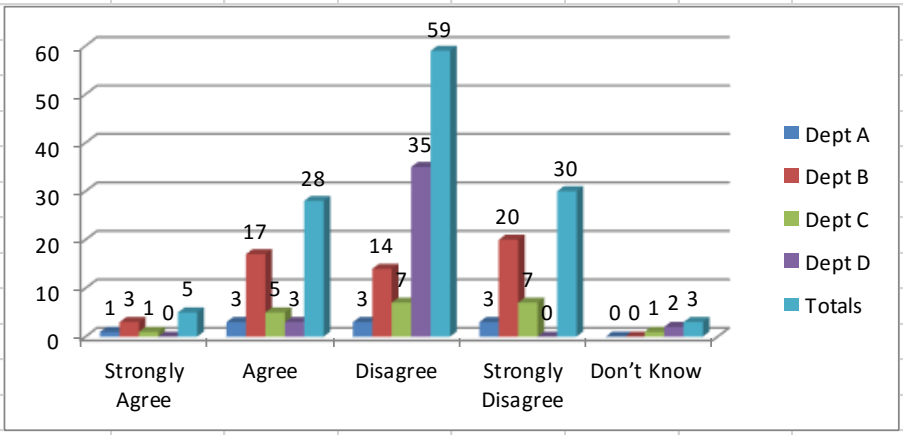
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	0	1	**4**	0	0	14	70%
Dept B	0	2	**8**	0	0	28	70%
Dept C	0	0	**7**	0	0	21	75%
Dept D	0	0	**9**	3	0	39	81%
Totals	**0**	**3**	**28**	**3**	**0**	102	75%



Q10g Student Data

g. When learning is mediated through technology, this diminishes the value of teaching

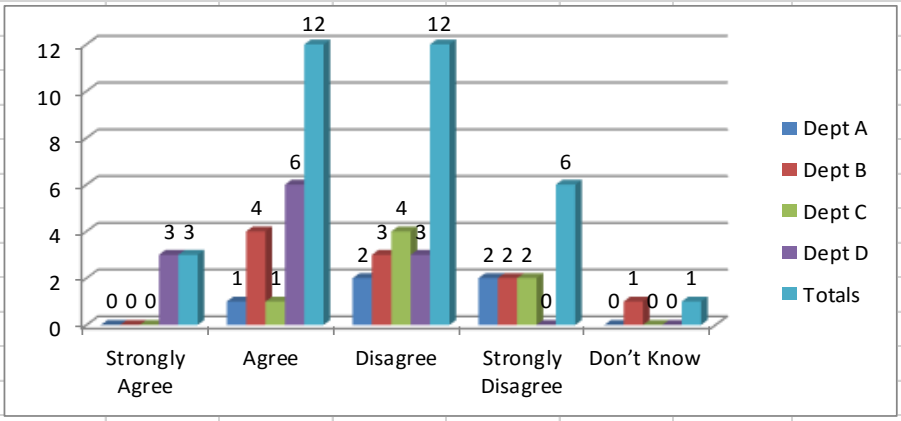
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	1	**3**	**3**	**3**	0	28	70%
Dept B	3	17	14	**20**	0	159	74%
Dept C	1	5	**7**	**7**	1	60	71%
Dept D	0	3	**35**	0	2	111	69%
Totals	5	28	**59**	30	3	358	72%



Q10h Educator Data

h. I think it is a good idea to use student's social websites (such as Facebook) as a means of teaching or giving feedback

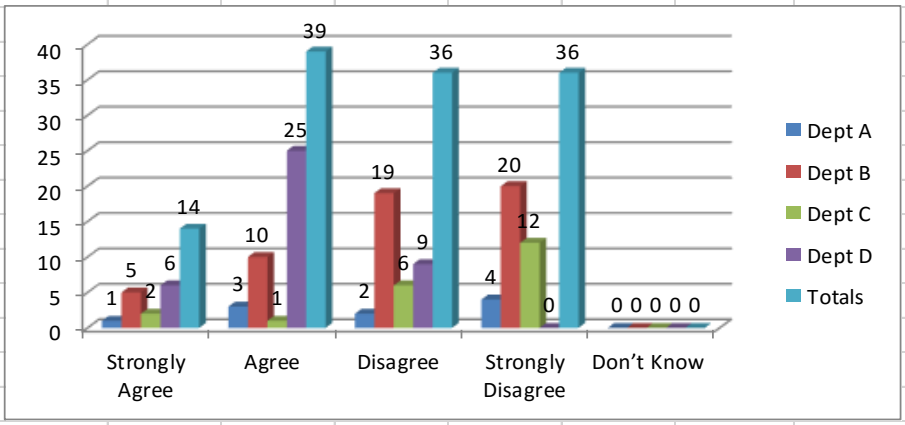
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	0	**1**	2	2	0	9	45%
Dept B	0	**4**	3	2	1	20	50%
Dept C	0	1	**4**	2	0	13	46%
Dept D	3	**6**	3	0	0	36	75%
Totals	**3**	**12**	**12**	6	1	78	57%



Q10h Student Data

h. I think it is a good idea to use student's social websites (such as Facebook) as a means of teaching or giving feedback

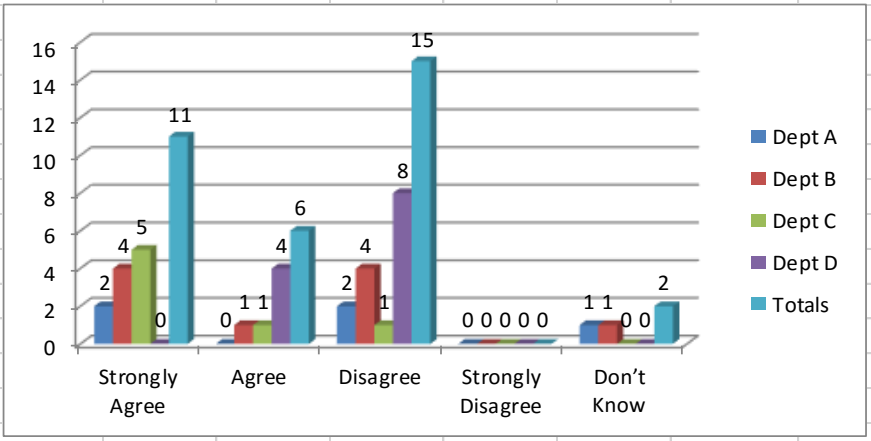
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	1	3	2	**4**	0	21	53%
Dept B	5	10	19	**20**	0	108	50%
Dept C	2	1	6	**12**	0	35	42%
Dept D	6	**25**	9	0	0	117	73%
Totals	14	**39**	36	36	0	281	56%



Q10i Educator Data

i. Due to the open nature of the World Wide Web, it is almost inevitable that students will plagiarise the work of others

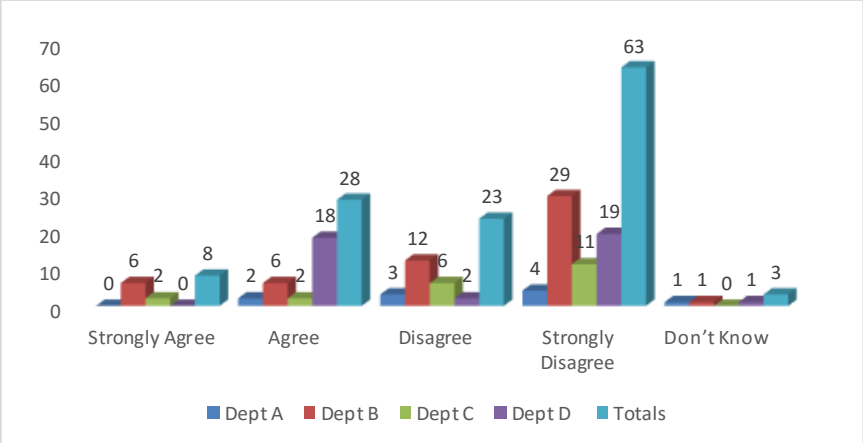
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	**2**	0	**2**	0	1	8	40%
Dept B	**4**	1	**4**	0	1	18	45%
Dept C	**5**	1	1	0	0	10	36%
Dept D	0	**4**	**8**	0	0	32	67%
Totals	11	6	**15**	0	2	68	50%



Q10i Student Data

i. Due to the open nature of the World Wide Web, it is almost inevitable that students will plagiarise the work of others

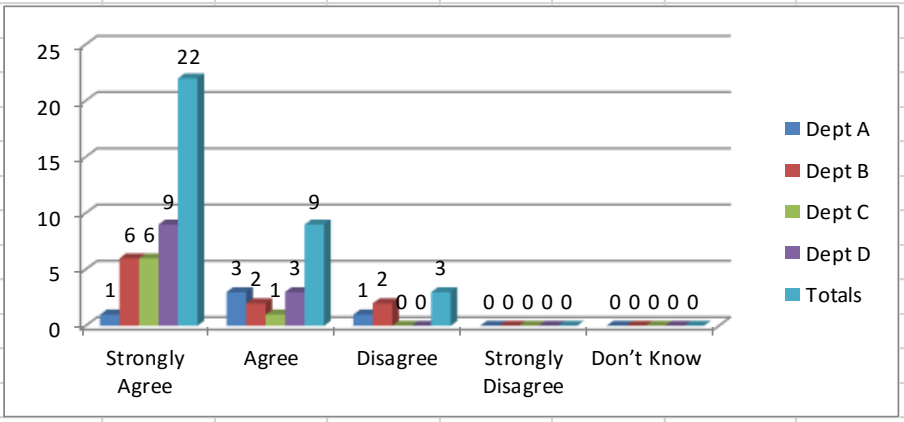
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	0	2	3	**4**	1	29	73%
Dept B	6	6	12	**29**	1	170	79%
Dept C	2	2	6	**11**	0	68	81%
Dept D	0	18	2	**19**	1	118	74%
Totals	8	28	23	**63**	3	385	77%



Q10j Educator Data

j. For myself, teaching is best as a blend of face to face and e-learning strategies

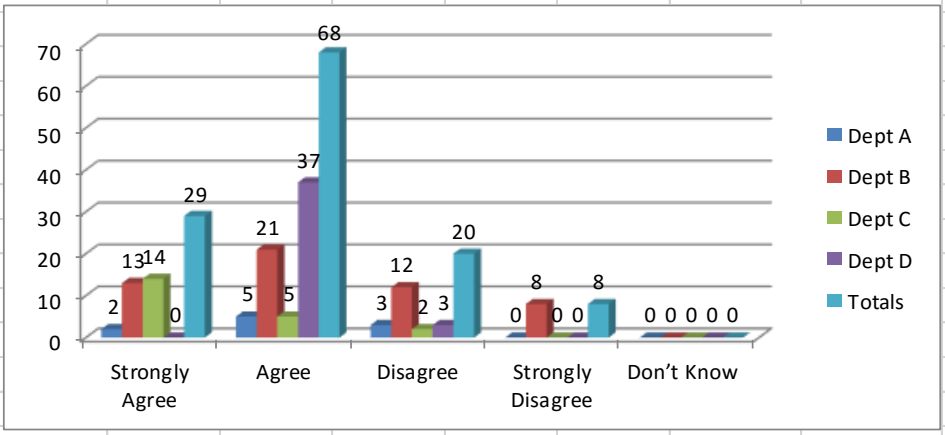
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	1	**3**	1	0	0	15	75%
Dept B	**6**	2	2	0	0	34	85%
Dept C	**6**	1	0	0	0	27	96%
Dept D	**9**	3	0	0	0	45	94%
Totals	**22**	9	3	0	0	121	89%



Q10j Student Data

j. For myself, learning is best as a blend of face to face and e-learning strategies

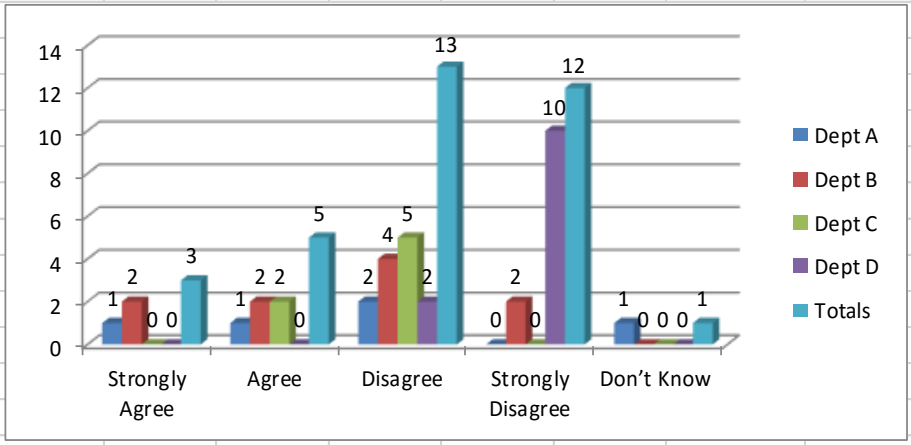
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	2	5	**3**	0	0	29	73%
Dept B	13	**21**	12	8	0	147	68%
Dept C	**14**	5	2	0	0	75	89%
Dept D	0	**37**	3	0	0	117	73%
Totals	29	**68**	20	8	0	368	74%



Q10k Educator Data

k. e-learning is when students are left to learn on their own

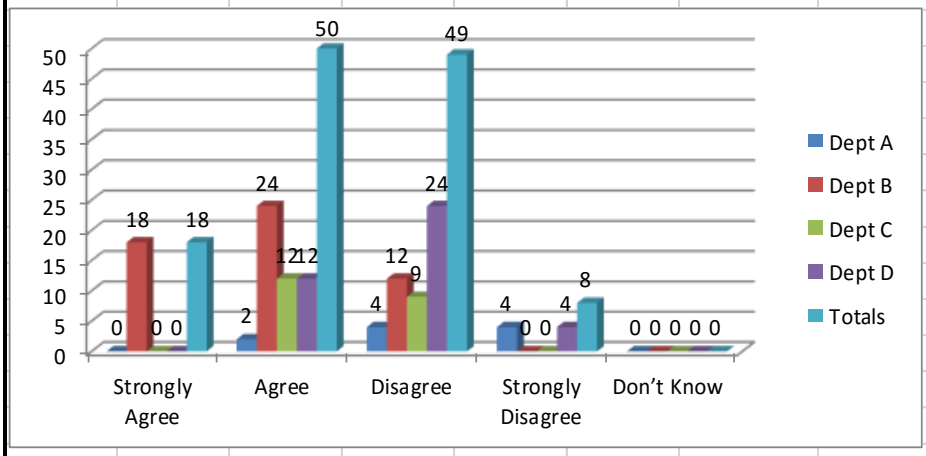
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	1	1	**2**	0	1	9	45%
Dept B	2	2	**4**	2	0	26	65%
Dept C	0	2	**5**	0	0	19	68%
Dept D	0	0	2	**10**	0	46	96%
Totals	**3**	**5**	**13**	**12**	**1**	100	74%



Q10k Student Data

k. e-learning is when students are left to learn on their own

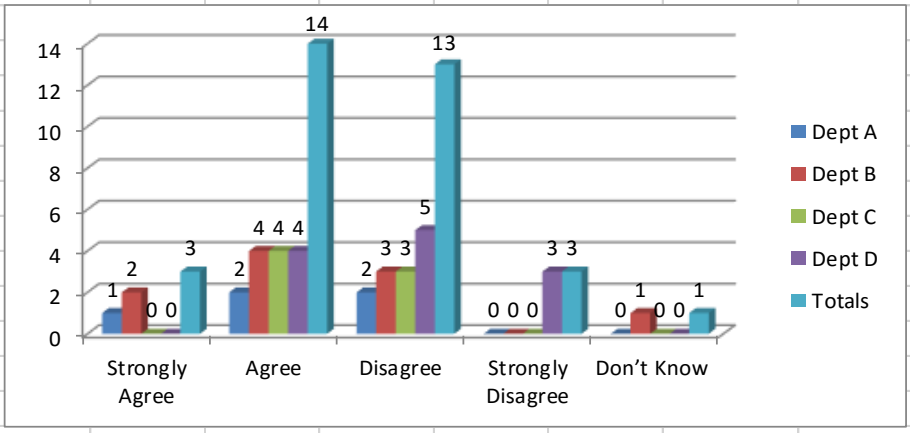
	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	0	2	**4**	4	0	32	80%
Dept B	18	**24**	12	0	0	102	47%
Dept C	0	**12**	9	0	0	51	61%
Dept D	0	12	**24**	4	0	112	70%
Totals	18	**50**	49	8	0	297	59%



Q10l Educator Data

l. e-learning is a poor motivator to learn and keep to deadlines

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	1	**2**	**2**	0	0	11	55%
Dept B	2	**4**	**3**	0	1	19	48%
Dept C	0	**4**	3	0	0	17	61%
Dept D	0	4	**5**	3	0	35	73%
Totals	**3**	**14**	**13**	**3**	**1**	82	60%



Q10l Student Data

l. e-learning is a poor motivator to learn and keep to deadlines

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know	Attitude Score	Positivity Percentage
Dept A	1	**5**	3	1	0	24	60%
Dept B	2	**22**	17	13	0	149	69%
Dept C	3	**13**	4	1	0	45	54%
Dept D	2	**20**	18	0	0	96	60%
Totals	8	**60**	42	15	0	314	63%